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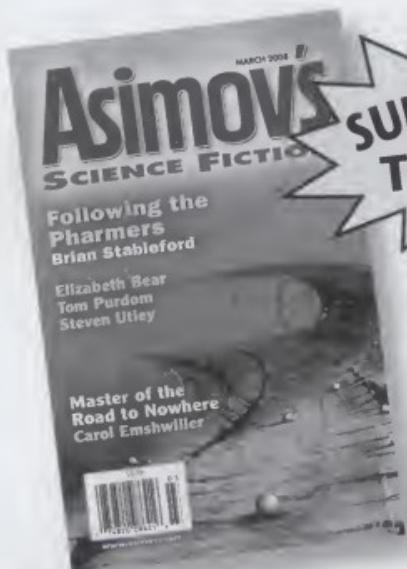
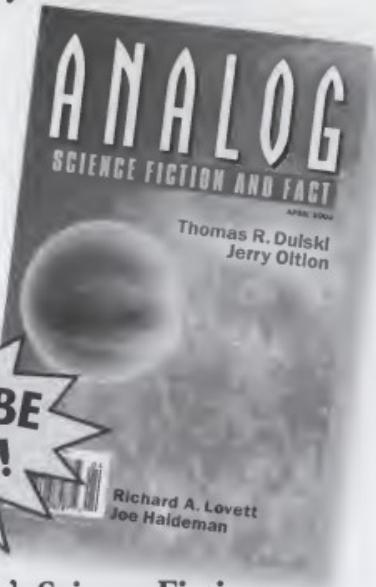
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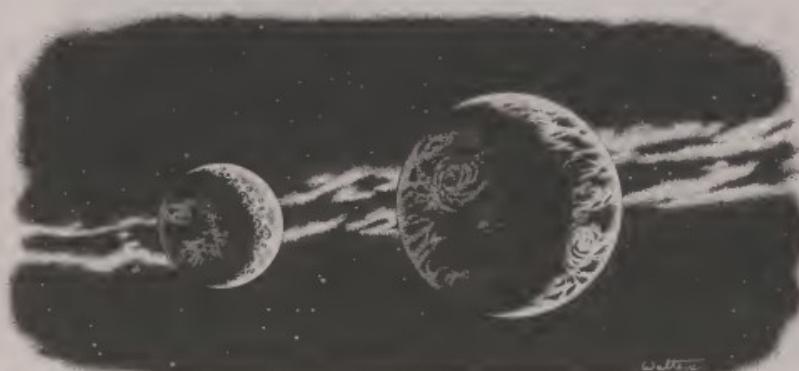
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TRUE CONFESSIONS

My passion for Star Trek in my mid-teens, was a fire that went through me like a fever. It was kindled by Stephen Whitfield and Gene Roddenberry's nonfiction book *The Making of Star Trek*. While I had always been interested in the show, this paperback turned it into the typical teenage obsession. The book included a handy list of the show's original seventy-nine episodes. I would watch a rerun after high school and then check it off the list. Some episodes were rare, while others repeated endlessly. They seemed to be shown in no particular order. My fixation on the series was extinguished some two years later at the very moment that I crossed off my last episode—number 67, "The Empath."

While the passion might have ended, those two years had a profound impact on the rest of my life. I devoured James Blish's short story adaptations of the episodes and wrote and lavishly illustrated my own Star Trek comic book (hopefully long since lost to time). It was because of the show that I attended my first science fiction convention—a Star Trek con at the old Commodore Hotel in New York City—and picked up flyers for the World Science Fiction convention. I also persuaded my parents to drive clear across our home state on a hot summer night to see Leonard Nimoy in an outdoor production of *Camelot*. Later that night, they waited patiently while I stood on line outside the tent that doubled as the actor's dressing room to get his autograph. The signature has long since fluttered away, but I still appreciate my parents' indulgence.

Once this fire was doused, I hardly ever talked about it. I bristled when my dear friend Isaac Asimov insisted that the program in general, and Spock's ears in particular, had attracted a large num-

ber of women to all aspects of science fiction. While that might have been true for some, it was my love of print science fiction that had awoken my interest in the TV show. In my twenties, I was mortified to think that anyone would assume it was the other way around. Besides, I insisted, and still believe to some extent, my favorite character was the fatherly Dr. McCoy, and not the charismatic Captain Kirk or the mysterious and woefully misunderstood Mr. Spock.

My reticence was also due to the scorn that was piled upon the "Trekkies" (a term I never applied to myself) both within the field of SF and in the world at large. The mainstream press snidely heaped even more ridicule upon the show's aficionados than they did on the typical SF fan. And SF convention goers were rightly affronted when the only note that same mocking press took of a Worldcon was to run a photo of the guy in a red starfleet uniform. For some reason, anyone who had ever expressed an interest in the show had to loudly proclaim that they were gainfully employed and capable of forming relationships with people other than their parents.

While I saw most of the movies and many episodes of the first three television sequels, motherhood and a demanding job did make it difficult to keep up with the various permutations of Star Trek and most other television as well. Like many Star Trek viewers, I enjoyed the parodies when I got the chance to watch them. I thought *Galaxy Quest* was wonderful. One of the film's screenwriters, Robert Gordon, and its director, Dean Parisot, picked up the movie's Hugo Award at Chicon 2000. I told the two men that I thought the film was the kindest treatment I'd ever seen of the Star Trek phenomenon. After all, the

fans were handled gently and it is a fan who ultimately saves the cast of the imaginary television show.

Until recently, *First Contact* was the last Star Trek movie I'd seen. I found I'd lost interest in Star Trek films that didn't feature any of the original cast. Although the buzz made the new movie sound interesting, I was at first ambivalent about seeing a film that featured new actors in the series' traditional roles. Yet, when a friend who I've known since our teenagers were babies called to invite me to the movie over the opening weekend, I decided to abandon my husband and children for the reduced price showing on Saturday morning. Yes, there were enormous holes in the plot and I was disturbed by some of the storyline, but when the film ended, I felt like the surrounding air pressure had been lightened. I had truly enjoyed myself, and so had my friend, and so, apparently, had nearly everyone else. I told my husband I'd be happy to see the movie again with him and the kids.

A couple of weeks after catching the film, I found myself at a playground with other parents of first graders. They'd all loved the movie and they all seemed pretty familiar with the original show. One of the fathers, a landscape artist, appeared to be a walking compendium of all the early episodes. When he discovered that I could keep up with him pretty well, he grinned and announced loudly that I was a Trekkie. Well, I replied for the first time in my life, maybe I am.

I recently asked a group of teenagers why they had enjoyed the movie so much. They attributed it to the twist that made the unfolding story their own, not their parents. They also liked the excitement and the special effects. Finally, they admitted that what they really liked was that Spock was hot, and Kirk was hot, and Uhura was hot. And they were. They always were. But the hottest aspect of the show for me, has always been the strange new worlds and new civilizations. I hope the next movie will continue looking for them. In the meantime, though I still love Dr. McCoy, maybe Mr. Spock's ears aren't so resistible after all. O

Asimov's SCIENCE FICTION

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BUILDING WORLDS: PART II

Last month's column offered some general thoughts on how science fiction writers go about inventing plausible worlds, drawing heavily on the ideas of two masters of the process, Poul Anderson and Hal Clement. Now I want to offer some specifics showing how I devised my own best-known imaginary world, the planet Majipoor of *Lord Valentine's Castle* and its various companion volumes.

I began with nothing more than the skeleton of a plot involving a dispossessed monarch and the desire to set my story on a giant world rather like the one that Jack Vance envisioned in his 1952 novel, *Big Planet*. I intended, though, to carry the investigation of that world far beyond what Vance had chosen to do in that one relatively short book.

Big Planet takes place on a planet with a climate somewhat like India's that is divided into hundreds or thousands of independent principalities. Because its crust is devoid of the heavier elements, Vance's planet has "no metal, no machinery, no electricity, no long distance communication." Therefore—despite its immense size, with a circumference seven or eight times that of Earth—*Big Planet* is a low-density world with a gravitational pull about the same as ours and a similar atmosphere, thus making possible human settlement.

Vance's novel is a lovely colorful romp. But, because SF books in the 1950s had to be fairly brief, it's only about fifty thousand words long, and merely nibbles at the infinite complexity of the planet on which it is set. Had he wished, Vance could have placed another dozen novels there without exhausting the territory. The only time he did return to *Big Planet*, though, was in the relatively minor novel *Showboat World*, so the notion

came to me of creating a Big Planet of my own and exploring it more fully than Vance did his.

At first, for the sake of distinguishing my world from the tropical jungle wilderness of Vance's book, I envisioned a single tremendous city spreading thousands of miles in all directions, covering most of the land mass—the very opposite of Vance's concept. (Reaching for opposites is a good way to find story ideas.) But very quickly I saw the impossibility of that. If I wanted a population of many billions, I would need extensive agricultural zones to support it; and if I wanted (as I very much did) to create a host of fascinating plants and animals, I would have to have a variety of wild places.

So pole-to-pole urban development made no sense, and in the end I fell back on a model that was even more like a giant India than Vance's planet: a place of teeming cities surrounded by vast farming districts, and yet, nevertheless, having huge wilderness areas ranging from torrid desert to lush jungle to snow-capped mountains, surrounded by an ocean so enormous that no expedition had ever succeeded in crossing it. What I had in mind, in other words, was a planet so large that it could encompass a host of varying environments—jungles, interminable swamps, arid plateaus, great rolling savannas, rivers seven thousand miles long, cities of thirty billion people—without any sense of crowding whatever.

The astrophysical details didn't require much homework. Since I was beginning with the assumption that my planet had to be a comfortable one for human settlement, I needed a main-sequence G-type sun much like our own. (For a touch of exoticism I made it golden-green in color rather than yellow.)

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The planet's low-density structure accounted for a gravitational pull about like Earth's despite a much greater diameter. For human use the atmosphere had to be something close to Earth's 78-21 nitrogen-oxygen mix. By way of encouraging agricultural productivity I gave it a relatively minor axial tilt, thus avoiding sharp seasonal changes: some parts of Majipoor would be fairly dry, others rainy, but the climate would be benign everywhere except in the snowy polar regions.

Still, by employing the Vancean low-density planetary model, with its concomitant shortage of useful metals, I would have to veer somewhat from a strictly science-fictional mode of thinking, because without metals there could be very little in the way of machinery—no aircraft and no telecommunications system, for example. How, then, could I justify the existence of those cities with thirty billion people in them, with no rapid transit, no telephones, no elevators, indeed no high-rise structures? How could there be any sort of coherent central government, let alone the hierarchical and quasi-feudal monarchy that would justify a title like *Lord Valentine's Castle*?

I began to see that I would have to operate on that blurry borderline where science fiction shades into fantasy: a dollop of telepathy here and there for communication, a certain amount of vagueness about technology (an ancient civilization that has long ago used up its sparse metals and forgotten how its own mechanisms work), and some kind of ground-effect vehicles ("floaters") that didn't require internal-combustion engines or electricity to drive them. The lack of air transport, I figured, would work in my favor, adding to the sense of planetary immensity that was one of my primary goals: on Majipoor it would take just about forever to get from anywhere to anywhere. Distant cities would become misty, quasi-mythical places.

(I interject herewith that everything I have to say here about building worlds

for science fiction novels applies just as well to fantasy. I regard science fiction as just one sub-set of fantasy, anyway. Everything in a fantasy novel, however it may contravene the laws of nature as we understand them, needs to have its own internal consistency, since, without the rigor of internal logic, plot problems can be trumped in any old arbitrary way for the writer's convenience and the narrative line will quickly collapse as one rabbit after another is pulled from the auctorial hat. So the writer needs a thorough understanding of how our own world's non-technological societies actually worked, and needs to follow those workings in all details save only the one speculative departure that generates the fantasy element itself. For further information on constructing fantasy worlds, I commend to you another Poul Anderson essay, "On Thud and Blunder," recently republished on the Internet and easily findable there.

While the planet itself was taking shape in the forefront of my mind, other cerebral areas were quietly at work devising an elaborate plot, characters to enact it, a history and a culture and a political system, and all those other features that a lengthy science fantasy novel needs. But most of my conscious attention at that point was going toward envisioning Majipoor: its climate, its native lifeforms, above all its geography and topography. These things, I knew, would determine many aspects of the story itself, from the form of government to the movements of my protagonists.

All right: maps, next.

I drew some quick sketches. Three continents, each far larger than any of Earth's. One, the earliest to be settled and immensely populous, to be the center of the world government; another, not as thoroughly urbanized, though with some major cities and a river of phenomenal size cutting across it, to be the home of the surviving aborigines who would, I already was coming to see, play a key role in the plot; the third, more obscure, a forbidding desert land in the torrid south.

By now I had put some meaning behind the title that had spontaneously offered itself. The eponymous Castle was the seat of the monarch, and I would put it atop a special geographical feature: a super-Kilimanjaro, a mountain thirty miles high in the middle of the primary continent. Castle Mount, I called it. It would be virtually a continent in itself, albeit a vertical one, protected from high-altitude forces of wind and cold and by weather-altering and atmosphere-creating machinery designed and installed when Majipoor still was in its technological era. There would be fifty spectacular cities along its slopes and a gigantic Gormenghast-like royal castle at its summit.

But, since the political structure of Majipoor and the plot of the novel now were unfolding in my mind with the same swiftness as the geographical background, I needed a second capital also, for I intended a double monarchy. In order to sustain Majipoor's huge population under a single stable government, I wanted a ruling system that would provide a long series of enlightened monarchs. Hereditary rule wouldn't do that—sooner or later it gives you a Caligula or a Nero—and neither, as I see it, would democracy. (Hitler was a democratically elected Chancellor.) But I remembered the system of adoptive emperors that produced the most successful period in the long history of the Roman Empire, each ruler choosing the most qualified man of the realm to follow him to the throne and adopting him as his son: Nerva picking Trajan, Trajan Hadrian, Hadrian selecting Antoninus Pius and simultaneously designating the promising young Marcus Aurelius to be Antoninus' ultimate successor.

I proposed—fantasy, again—to ask the reader to believe that such a system could be kept going for thousands of years if each emperor gave proper care to his choice of a successor. But also I intended to have two rulers in office at once, much as Fifth Republic France has a President and a Prime Minister, and the later Romans operated with an Augustus and a Caesar as senior and junior emperors. The older monarch—the Pontifex, I called him, with a nod to Rome—would live out of sight, in the deepest levels of a labyrinthine underground city thousands of miles south of the Castle. The junior king—the Coronal—would be the highly visible occupant of the Castle atop the great mountain, the public figure carrying out the orders that emerged from the hidden emperor in the Labyrinth. Upon the death of the Pontifex, the Coronal would take his place in the gloomy subterranean capital and his designated successor, technically his adoptive son, would become Coronal at the Castle.

I realized at this point, also, that what I would be writing was a novel of quest, of internal discovery, of the attainment of responsibility. One should never become so obsessed with the world-building process that one loses sight of the story-building process: the two should grow simultaneously, organically intertwined, once the basic groundwork has been established. A quest-novel, then. But who would undertake the quest, and what would he be seeking? The world I was designing had taken its essential form; it was time to establish the characters who would act out the story I intended to set on that immense planet.

And I see that this is going to take another column to finish the job. ○

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THE PEOPLE'S TELESCOPE

boldly going

As I write this, astronauts aboard the shuttle *Atlantis* have finished repairs to the **Hubble Space Observatory** <hubblesite.org>. By all reports this risky and ambitious mission has been a success, giving the Hubble its fifth reincarnation. Assuming that the shakedown cruise goes well in the coming months, **NASA** <nasa.gov> expects that the Hubble will continue to be our one true starship for another five or perhaps even ten years.

Starship? Okay, so maybe I have interstellar travel on my mind these days; just last week I saw the new **Star Trek** <startrekmovie.com>. What did I think? Well, Sheila doesn't pay me to review movies and, by the time you read this, all of you who care will have already seen it and thus have your own opinions. But if you ask me, although it is certainly a rousing adventure and it successfully re-imagines the characters so dear to us <startrek.com/startrek/view/series/TOS/casts/index.html>, it doesn't appear to have an original SF thought in its pretty little head.

Oh right, blowing up planets is not cool.

But this is just an origin story and there are bound to be multiple sequels, so there is time for **J.J. Abrams** <en.wikipedia.org/wiki/J._J._Abrams> and his crew to figure out what the hell the *Enterprise* is boldly going to the stars for.

We do know, however, what the Hubble is doing. Astronomy and all its associated fields: planetary science; stellar, galactic, and extra galactic astronomy; astrophysics; and cosmology. It is with-

out a doubt one of NASA's greatest hits, perhaps *the* greatest. Although it is much beloved and has been nicknamed "the People's Telescope" the Hubble has had a checkered history.

The first serious proposal for a space telescope was floated in 1946 by **Lyman Spitzer, Jr.** <spitzer.caltech.edu/about/spitzer.shtml>, who continued to push for his idea right up until congressional authorization in 1977. He pointed out the two principal advantages of a space-based observatory: it is not hindered by atmospheric distortion and it can make observations in wavelengths like ultraviolet, gamma, and X-rays that are blocked or absorbed by our atmosphere. The new space telescope was named after the cosmologist **Edwin Hubble** <edwinhubble.com>, who was the first to confirm that the universe was expanding.

Hubble's troubles started when **Perkin-Elmer** <perkinelmer.com> was awarded the contract for the primary light collecting mirrors. For various reasons, the company had problems delivering in a timely manner, so that the projected 1983 launch date was postponed to 1985. Then, just after the Hubble was completed, the **Challenger** <fas.org/spp/51L.html> exploded and the space shuttle fleet was grounded. For five years NASA kept the Hubble on layaway, powered up in a clean room at a cost of six million dollars a day. Finally, in April of 1990, the Hubble was boosted to low Earth orbit aboard the **shuttle Discovery** <en.wikipedia.org/wiki/STS-31>. A few weeks later, it started beaming the first pictures back to Earth.

And they were out of focus. To the world's universal chagrin, we discovered

that our far-seeing space telescope needed glasses. A blue ribbon commission <http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19910003124_1991003124.pdf> was convened to investigate the problem; it put the primary blame on Perkin-Elmer, but also cited NASA for failing to note "that the mirror was made in the wrong shape, being too much flattened away from the mirror's center. . . . The error is ten times larger than the specified tolerance." It was at this time that NASA and its billion dollar boondoggle became fodder for snarky comedians, who likened the Hubble to such technological fiascos as the *Titanic*, the *Hindenburg*, and the Edsel. It was not a promising start for the People's Telescope.

However, the Hubble had been designed from the start to be serviced as necessary by the shuttle fleet, and so in 1993 NASA dispatched the **Endeavour** <en.wikipedia.org/wiki/STS-61> to correct the problem. In one of the most complex missions in shuttle history—until the most recent one—astronauts installed both a corrective optics package and the **Wide Field and Planetary Camera 2** <hubblesite.org/the_telescope/nuts_and_bolts/instruments/wfpc2/>, which has taken most of the pictures for which the Hubble is justifiably famous. They also replaced solar arrays, gyroscopes, various electronics systems, and upgraded the onboard computer. The Hubble was saved—for the time being.

Altogether there have been five Servicing Missions, although the most recent almost didn't happen. In the wake of the **Columbia disaster** <space.com/columbiatragedy> it was deemed too risky to send a shuttle to Hubble. All of the post-Columbia missions had to be able to reach the **International Space Station** <nasa.gov/mission_pages/station/main/index.html> in case of emergency, where it was possible to inspect a shuttle for damage and, if necessary, have the crew take refuge while they waited for rescue. This was not an option with a Hubble visit, so in 2003 NASA announced that it was scrapping

the last service mission and preparing plans for a robot to push the space telescope out of orbit so that it would burn up safely in the atmosphere.

This touched off a firestorm of protest from friends of the Hubble, both in the scientific community and in the general public. Websites went up, Congress held hearings, and schoolchildren sent their lunch money to save "the People's Telescope."

And so the Hubble was saved—for the time being.

Because this recently completed mission <en.wikipedia.org/wiki/STS-125> is positively, absolutely the last time that a shuttle will be available for a servicing mission. The fleet will be retired in 2010; the first round of layoff notices <space.com/news/090501-nasa-shuttle-layoffs.html> have already gone out to shuttle contractors. Originally, the Hubble was to be retrieved at the end of its mission and brought back to Earth in a shuttle cargo bay. But there will be no place of honor in the **Smithsonian** <nasm.si.edu/> for this space pioneer. Current plans call for a robotic craft to lock onto it sometime after 2020 and "de-orbit" the Hubble.

seeing

Although it is commonly referred to as a space telescope, the Hubble is more properly a space observatory. Of the five instrument systems on board, the output of the Wide Field and Planetary Camera 2 (WFPC2) and the Advanced Camera for Surveys (ACS) are the best known; these take the stunning pictures <heritage.stsci.edu/gallery/galindex.html> of our universe that grace posters and screen savers around the world. On the mission just concluded the WFPC2 was replaced by the Wide Field Camera 3. The ACS, the Hubble's "telephoto lens," had been malfunctioning, operating with only one of its three channels available to scientists; it was successfully repaired. These systems detect visible light from the most distant, highly redshifted galaxies. They have found massive planets and

have been instrumental in mapping the distribution of dark matter <science.howstuffworks.com/dark-matter.htm>.

The Near Infrared Camera and Multi-Object Spectrometer (NICMOS) is Hubble's heat sensor. Interstellar gas and dust can block visible light, so the NICMOS sees in the infrared, which is invisible to the human eye. It therefore can see even further than the visible light instruments and is particularly suited to detecting newly forming stars and clusters.

The Space Telescope Imaging Spectrograph (STIS) is a powerful general-purpose spectrograph that allows scientists to examine the chemical fingerprints of distant objects. The STIS has analyzed the chemistry in the atmosphere of extrasolar planets and has detected supermassive black holes <csep10.phys.utk.edu/astr162/lect/active/smblack.html> rotating at the centers of several galaxies. The STIS failed in 2004, but was resuscitated in the most recent mission.

The Fine Guidance Sensors (FGS) are devices that lock onto the Cepheid variable stars <imagine.gsfc.nasa.gov/docs/science/mysteries_II/cepheid.html> to aim the Hubble in the right direction. These so-called "guide stars" have been used by modern astronomers to measure distance in space; however, until Hubble and its FGS, those measurements were known to be inaccurate. The data returned by these sensors has helped us pinpoint distances in the universe, refine the Hubble Constant <cfa.harvard.edu/~huchra/hubble>, and estimate the size and age of the universe.

Black holes, dark matter, extrasolar planets, galaxy formation, the age and size of the universe—Hubble has confirmed some theories about the nature of the universe, called others into question and, in the process, spectacularly fulfilled its mission. In the scientific community, that would easily account for its popularity. But why has it become "the People's Telescope?" I think it is because, unlike much of our technology, it has a story. The Hubble has ever ridden a rollercoaster of expectations. Its history

is filled with crushing disappointments and dazzling recoveries.

But perhaps there is something more.

exit

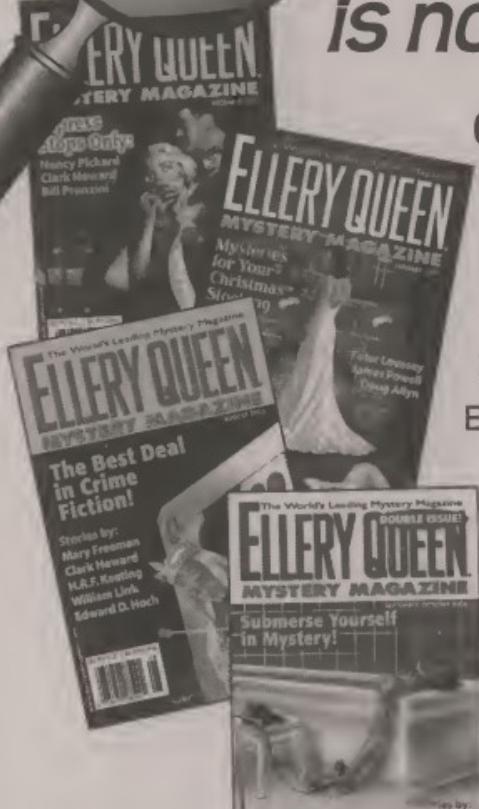
Back to *Star Trek* for a moment: I am old enough to remember when the original series made its debut on television. As you might expect, this fifteen-year-old was pretty much hooked, as much by the future *Star Trek* seemed to promise as by the plots and the characters. Like me, many science fiction fans at the time were convinced that, while our future in space would not necessarily involve velour uniforms and dilithium crystals, humans would leap someday to the stars. Maybe even Jim Kelly! In 1966, it didn't seem all that farfetched. According to the holy trinity of science fiction—Heinlein, Clarke, and Asimov—stardrives were very doable.

My longtime readers might remember a column entitled **FTL** <asimovs.com/_issue_0406/onthenet.shtml>, wherein I reviewed all the reasons why faster than light travel is more fantasy than science fiction. I doubt very much that humanity is going to the stars, at least not in a starship. As the history of the Hubble and the shuttle program show, even getting to orbit is fraught with peril. Missions to space are far from routine.

But in our starship of the mind we have traveled some twelve billion light years from Earth, exactly at the speed of light. With the aid of images taken by the Hubble we have witnessed planets being born and the death of stars. We have ventured to distant galaxies and soon, with the improvements just installed, may be able to see back in time and space to the universe's adolescence, some five hundred million years after the **Big Bang** <umich.edu/~gs265/bigbang.htm>. It seems to me that's one reason why the Hubble has so endeared itself to the world.

Pictures may not be exactly what we wanted, but they are enough, thanks to "the People's Telescope." O

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THOUGHT EXPERIMENTS

ALMOST POSSIBLE

Mary Robinette Kowal

*Mary Robinette Kowal is the 2008 recipient of the Campbell Award for Best New Writer. Her short story, "The Consciousness Problem," appeared in our August issue, and she has sold fiction to Strange Horizons, Cosmos, and other venues. The author, a professional puppeteer and voice actor, lives in Oregon with her husband Rob. Tor is publishing her first novel, *Shades of Milk and Honey*, in 2010. Visit www.maryrobinettekowal.com for more information about her fiction and her puppetry. Recently, she sat down with Dr. Michio Kaku to discuss where the cutting edge in science lies, what science fiction is, or could soon be fact, and which scientific conjectures are food for thought for the next generation of SF writers. Dr. Kaku is a theoretical physicist, best-selling author, and popularizer of science. He's the co-founder of string field theory (a branch of string theory), and continues Einstein's search to unite the four fundamental forces of nature into one unified theory. His book, *Physics of the Impossible: A Scientific Exploration of the World of Phasers, Force Fields, Teleportation, and Time Travel*, was reprinted by Anchor last April. The book has been on the New York Times Bestseller List and it is also the inspiration for a series that is currently being filmed for the Science Channel.*

There are a lot of things that pull folks to science fiction, but probably the biggest draw comes because it makes impossible things seem possible. Who wouldn't want to travel to distant stars or back in time? Aren't there times when being invisible would be handy? Given a choice, I'd teleport instead of mucking about with the average commute.

But the interesting thing about some of the best science fiction is that the sci-

ence in it doesn't stay fiction for long. Remember Jules Verne and the *Nautilus* or the communicators on *Star Trek*? These fictional devices are part of our everyday world because science doesn't stand still. It makes you wonder which of today's science fiction tropes are tomorrow's reality.

I had the opportunity to talk to theoretical physicist Michio Kaku about his book *Physics of the Impossible*, in which he breaks the impossible down into three useful categories. Class I—Technologies that are impossible today, but do not violate the known laws of physics. They might be possible in a few decades or in this century. Class II—Technologies that sit at the edge of our understanding. They are centuries to millennia away from realization. Class III—These break the known laws of physics.

The handy thing about thinking of the impossible in this way is that it helps when planning science fiction. If you can make a guess about whether an invention might have occurred by the time your story takes place, then you can build more believable futures.

Take, for instance, force fields. These invisible barriers have been a part of science fiction since at least 1912 with William Hope Hodgson's *The Night Land*, but have often seemed to be pure fantasy. Much to my surprise, it turns out that not only are force fields mere Class I impossibilities, the elements to make one are already in development.

In 1995, physicist Ady Hershcovitch invented something called a "plasma window" at Brookhaven National Laboratory in Long Island, NY. Plasma is essentially super-heated gas made of ionized atoms. Using electric and magnetic fields to shape plasma, Dr. Hershcovitch can create a "window" capable of preventing air from entering or leaving a space.

You can, in fact, use it to contain a vacuum. The downside is that the plasma is heated to 12,000° F, which is hot enough to vaporize metal. Standing anywhere near the glowing blue window would be unbearably hot, which makes it a little questionable for daily use, but handy as a protective field.

Dr. Kaku theorizes that one could make a more traditional force field by using layers of technology—all of it almost within reach. Beginning with a plasma window, he posits adding a criss-crossing curtain of high-energy lasers, also capable of vaporizing projectiles, and finishing with a lattice of nanotubes.

Lasers have been around for a while, but the prototypes of carbon nano sheets also exist. When those nanosheets are perfected, they will be one molecule thick, stronger than Kevlar and invisible. By using the three layers, a force field will be able to repel most attacks.

Is that exactly the way force fields are described in fiction now? No, not really. But in most ways, it fulfills the need for a force field by creating an invisible, impenetrable barrier.

Impenetrable, that is, to everything except lasers. If something is transparent, then light can pass through it. Someday, Dr. Kaku says, one might add a layer of "photochromatics" to the force field. You know what those are, right? That's the same technology that causes sunglasses to darken outside. They still won't stop a laser. Yet.

Speaking of lasers, let's take a look at another stand-by of science fiction, the ray-gun. We're all familiar with the discrete bolts of energy that fly out of blasters and phasers alike. The problems with this are pretty elementary. Light is invisible unless it goes into the eye.

What? Yes, light is invisible. It's like this. Lasers are coherent light, so all the particles are vibrating in unison and in the same direction. You really only see it when it bounces off something toward your eye. Picture a focused flashlight in a dark room. You can see things reflecting the light, but unless there are dust parti-

cles in the air, you can't see the beam of light itself. A laser is just coherent light.

The way they make lasers visible in the movies is to use animation or to put dust in the air to cause a portion of the laser to bounce toward the camera. If the light has nothing to bounce off, you only see where it hits.

So all those ray-gun battles would involve invisible rays, especially in space. As a writer, I have to wonder how you dodge something you can't see? One pictures personal foggers, designed to show the enemy's laser lines.

So, if lasers exist and can be both deadly and invisible, why don't we have ray-guns today? The main reason comes down to power. They require tremendous power to operate and no one has yet come up with a portable battery that's strong enough. Can you imagine Han Solo hauling an extension cord around the halls of the Death Star?

It's amazing the way one piece of technology can cascade out to affect the rest of a society. Knowing that for ray-guns to exist in the future, in any sort of practical sense, there would have to be batteries with enough power to fuel a small city also tells you that this is a future where energy problems have been largely solved.

That's the nice thing about Class I impossibilities; you can look at them and see what technology hurdles have to be met in order to have that piece of tech in your future. It makes extrapolation easier.

Class II impossibilities, on the other hand, are a little trickier, because they are on the edge of our understanding.

Time travel is a pretty standard trope of science fiction. The first recorded time travel comes from Samuel Madden's 1733 story called "Memoirs of the Twentieth Century." But for all that, we've not seen any evidence of time travelers actually occurring.

The science fiction community was abuzz last year when Professor Ronald Mallet published a theory claiming that time travel was possible. The catch, he said, was that you couldn't travel any

farther back than the moment when the first time machine was turned on. So we haven't seen any time travelers because they can't get here until someone invents a working time machine.

I asked Dr. Kaku what he thought of this theory. He said, "You need fabulous amounts of matter and energy to bend time into a pretzel, on the scale of a black hole, and a tiny laser beam simply won't work. But there are reputable physicists who are working on this."

He cites Richard Gott, who proposes that it's possible to travel back in time by using a collision of giant cosmic strings, which have yet to be discovered. Though theoretically possible, it would only work for a short time and even that would require "more than half the mass-energy of an entire galaxy."

In fact, all of the time travel theories require an enormous amount of energy. Why? Dr. Kaku says that the basic ingredient needed to create the most likely form of time travel—a transversable wormhole—is negative energy. To generate this requires the energy of a star.

But that doesn't mean all hope of time travel is lost. There's also, he says, a loophole in Einstein's theory of relativity. In school, they initially tell students that "Gravity sucks" evenly.

Later, they say, "We lied. Gravity does not suck. Space pushes." Dr. Kaku explains that one possibility is that we don't go back in time, the past comes to you. If you compress time, then it's a matter of stepping across. In theory that could happen faster than the speed of light.

Which brings us to FTL . . .

"The sad thing for hard SF writers is that the theory of relativity prohibits Faster Than Light travel. It says that an object's mass increases as it approaches the speed of light; the more its mass increases and the more energy you'd need to move it. To reach light speed, you'd require infinite energy. Most science fiction writers who use FTL just power it with handwavium and move on. Sure, we know it's not really possible, but it lets us do stories that are so darn cool."

However, there are viable FTL options out there. Have you ever heard of an Alcubierre Drive?

In this theoretical engine, space gets compressed in front of the ship and dragged out behind it. Miguel Alcubierre, who came up with the idea using Einstein's theory of gravity, says, "People in *Star Trek* kept talking about warp drive, the concept that you're warping space. We already had a theory about how space can or cannot be distorted, and that is the general theory of relativity. I thought there should be a way of using these concepts to see how a warp drive would work."

Dr. Kaku describes it as placing a football on a fishnet tablecloth. The "waist" of the football has negative matter, but the tips have positive energy. As you push the football forward, it causes the tablecloth to bunch up in front of it. Because you can pass across the compressed space faster, it creates the illusion of traveling faster than light, without breaking any laws.

There are two downsides. First, it requires a series of exotic matter generators along the path of the engine. Sort of like subway stops. So, we'd still need slower than light travel to place the generators. Second, it needs that pesky negative energy to power it.

FTL falls into the Class II category quite neatly. It's theoretically possible but involves so many technological hurdles that it's still in the distant future.

Unfortunately, so is FTL communication. In Orson Scott Card's Enderverse he uses Alain Aspect's discovery that "under certain circumstances subatomic particles such as electrons are able to instantaneously communicate with each other" to create his ansible. This fictional device takes quantum entangled electrons and separates them across the galaxy. When one moves, the other vibrates, allowing faster than light communication.

I asked Dr. Kaku what he thought about this notion. He explained that Aspect's work actually referred to an exper-

iment Einstein created, commonly called the EPR experiment, or Einstein–Podolsky–Rosen paradox, after the physicists who proposed it. To begin with, it helps to know that if two electrons are vibrating in unison, and one electron is polarized up, then its partner electron is polarized down. So if you have a source that can emit a pair of electrons with opposite spins and then separate those electrons, you'd still know the state of the electron that wasn't with you, because it would be doing the opposite of the one that was with you. It's like knowing that Rob always wears one red sock and one green one but switches which foot they are on. If you see the red sock on his right foot, you instantly know that the left one has a green sock. If you're looking at an electron, you'd know the state of its twin faster than light. But it's random information, so you can't use it to send binary or Morse code.

Any loophole that would allow the quantum entanglement to work as communication would use a theory that depends on Quantum theory and Relative theory. Anything on that border has to be slightly suspect. Dr. Kaku suggests that if there is a viable loophole it would have to be in string theory, which is his specialty.

Class III impossibilities cover things that really seem to be impossible with known physics but there are vanishingly few of them. In fact, in his book, Dr. Kaku only lists two: Perpetual motion machines and precognition.

Out of all the seemingly impossible

things, that's not a bad ratio for physics. Granted there are some things in pure mathematics that are truly impossible, but in terms of our understanding of physics at this time, that leaves a lot of room for exploration. And what better medium to suggest new ground to explore than science fiction?

While a lot of physicists used to mask their interest in science fiction, a lot of them now refer to their early influences as coming from science fiction. Hubble read Jules Verne and had a career change. Albucierre reacted similarly to *Star Trek*. Dr. Kaku says that Asimov's *Foundation Trilogy* is partly responsible for sending him into theoretical physics. "It forces you to think about what physics will look like fifty thousand years from now. Most physicists only think of the future in terms of twenty to thirty years. When I read Asimov as a child, it gave me a new world outlook. That really shook me up. Impossibilities are in degrees."

With that in mind, I asked him to tell me what future technologies from current theoretical possibilities SF writers should be predicting in their fiction.

Without even having to think about the question, he said, "Nano-tech is coming very fast. Invisibility is coming very fast. It exists on a bacterial level now, but moving fast. Teleportation is moving slowly."

Looking at the range of things that are almost possible, it looks like science fiction is going to have to push even harder to create the next generation of impossibilities. ○

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Michael Poore has appeared in both literary and speculative magazines nationwide, including *StoryQuarterly*, *Fiction*, *Talebones*, and *The Nth Degree*. He was runner-up for the 2006 Fountain Award for literary excellence in speculative fiction and he has new work forthcoming in *Glimmer Train*. While "Blood Dauber" is Michael's first story for Asimov's, it's Ted Kosmatka's fifth sale to the Magazine. Ted's work has been serialized on the radio program *Beam Me Up*, reprinted in six Year's Best anthologies, and translated into Russian, Hebrew, Polish, and Czech. He and Mike have been buddies for years, and although they always wanted to write something together, the right project never came along. This story began as a casual conversation but quickly grew into a plot jotted down on a massive series of color-coded Post-it notes taped across several tables in a Borders Books cafe. Over the next month, it evolved into this compelling and dangerous tale of the . . .

BLOOD DAUBER

Ted Kosmatka & Michael Poore

The animals hate you. You get used to that, working at a zoo. Over time, it becomes a thing you can respect. Bell trudged up the path, pushing the wheelbarrow before him, already sweating under his brown khaki uniform. He squinted in the bright sunlight, eyeing the exhibits as he ascended the hill: the goats and their pandering; the silly, horny monkeys; the slothful binturongs—all moving to the front of their enclosures as he approached.

Most zoo animals eventually came to an understanding with those who brought the food. An uneasy truce.

But Bell knew better than to trust it.

He'd seen the scars.

Mary had scars on her arms. Garland was missing the tip of one finger, and John, the assistant super, had a large divot in the calf of his right leg.

"Zebra" was all he'd say.

Bell was the newest zookeep. No scars yet. But a wariness.

Walking up the hill that morning, Bell noticed Seana up ahead of him on the asphalt path. As he walked, he saw she wore two different-colored socks—one red, the other white. He wondered if she were absent-minded, or just quirky. He hadn't been at the zoo long, didn't know her well.

As he closed the distance, he saw that she was crying. And he realized why she wore one red sock. Her calf was gashed open, bleeding streams.

He followed her into the staff room, and she explained that the juvenile baboon had attacked her.

She was outraged. Betrayed.

"Why did you go in there?" he asked.

"I always go in there," she said. "I was here when it was born. I raised it."

"Animals are unpredictable."

She shook her head. "It's never done that before."

Never done that before.

Bell thought about that on the way home. Surprises puzzled him.

On one hand, it seemed there should never be any surprises. The world tended toward order, didn't it? It circled the sun at the same speed all the time. Water boiled predictably, froze predictably. People weighed the same in Dallas as they did in Quebec. The speed of sound, in dry air, was 767 miles an hour.

So why, Bell wondered, couldn't he and his wife keep track of money, plan ahead, and stop living in a trailer? In an orderly world, this shouldn't be impossible. In an orderly world, you shouldn't have to choose between buying food and keeping your car insurance.

Bell knew things were always more complicated than they looked. Water froze predictably, but strangely. It expanded. Crystals crashed and splintered. Sound moved faster underwater.

"And you can't keep from buying shit," he thought aloud, driving home.

He popped over the curb into the Li'l Red Barn parking lot.

They weren't going to spend anything this week, Bell and Lin had agreed. They didn't need to. Food in the fridge, gas in both cars. This week they wouldn't spend.

That morning, they'd run out of toilet paper.

"It's not an insurmountable problem," he'd told Lin. "We have paper towels."

"You're not," said Lin, "supposed to put anything besides toilet paper in the toilet."

"But you can," argued Bell, "if you need to."

Bell thought it was a spending problem. They knew how much money was coming in. If they controlled what went out, their money would be orderly, would increase. Lin disagreed.

"It's a matter of supply," she had pointed out. "Your job needs to supply more money."

"So does yours." Lin worked in the mall.

She glared ice. Splinters and crystals.

In Lin's world, it was okay for her to criticize Bell. It was not okay for Bell to criticize Lin. Not if things were to be orderly. In every mating pair, Bell knew, one animal always bit harder than the other.

Lin was the biter.

And in their two-mammal world where daily life was defined by constant, grinding poverty, it seemed she bit constantly.

It was important, they had once agreed, to do what they loved. To love their work.

"I love my work," Bell had told Lin a thousand times. Last month, in bed, he had told her how he loved his work, and they'd argued, and she'd scratched him with her fingernails. Drew blood. Made him want to hit her, and he almost did.

But he didn't. There were light years between wanting to hit a woman and actually doing it. Bell wasn't that kind of man. Wasn't that kind of animal. What kind of animal was he?

He wondered if she knew. Wondered if she'd seen it in his eyes, the almost-hitting. The wanting to.

He quit saying how much he loved his job.

Most zookeepers he knew were women whose husbands made better money. They could afford the love.

Lin knew this, too.

"Shelly Capriatti's husband sells guitars," she had told him, just the night before. Shelly Capriatti was someone she worked with, or worked out with, he couldn't recall. "High end stuff, like for professionals. Like if Eric Clapton needed a new guitar. There's no reason you couldn't do something like that. He makes a ton of money."

And he was on the edge, as he often was, of admitting to himself that he wished he hadn't gotten married, when she stretched herself across his lap in front of their eleven-year-old TV and was nice for a while. Long enough for him to sweep some hard truth under the rug. Again. It was easier that way.

He focused on that—the niceness—while he paid the cashier at the Li'l Red Barn. She could be nice. Things in general, sometimes, were nice.

Sometimes she was predictable, which was easier, but you had to be ready for both. Driving into the trailer park, he thought about that.

The baboon had never attacked anyone. Then, today, it did.

There's a first time for everything.

"You're cute the way a dog is cute," Lin had told him, in front of the TV.

You run out of toilet paper.

Things fall apart.

Not having money was a theme in Bell's life. Even the zoo was a poor zoo, poorly funded.

Sometimes people complained. Once a woman had come in, and when she'd seen the conditions in which the lions were housed, she'd been angry. People loved the lions.

"It's a cage," she said.

Bell had agreed with her.

"Zoos are supposed to be . . . natural," she continued. "They call them habitats, and the animals aren't even supposed to realize they're confined."

Bell understood. He sympathized. He'd been to zoos like that, too, in towns that weren't dying.

"Do you think they don't know?" he asked.

She only stared at him.

"Do you think, in these other zoos, that the animals don't know they're locked in?"

"A disgrace," she said, walking away.

Low funding required management to get creative when it came to provisioning the animals. In addition to supplies bought on the open market, there were arrangements with local grocery stores, and butchers, and meat processors. A truck was taken around each day to be filled with heaps of food—loaves of bread that had passed their freshness dates, meat that had begun to turn, gallons of milk that had expired. Occasionally there was carrion brought in—deer which had been struck on the highway and then picked up by the county. All of it fed into the bottomless maw of the zoo.

The trucks would drive around back and unload their cargo into the kitchen. It was called the kitchen, but it was not a kitchen. It was a room with several huge stainless steel tables on which food was piled and sorted and divided.

Bell was on his way to the castle when a voice on his walkie-talkie stopped him.
"Bell, there's something you need to see."

Lucy, one of the kitchen workers, out of breath.

He got there fast. Came in through the back door.

"It's a bug," said Lucy, hands at her collar.

"What kind?" he asked.

She shrugged. "It's a bug." She pointed at a bowl turned upside-down on the counter. Bell lifted the bowl. Put it down again.

He stood perfectly still.

He lifted the bowl and stole another quick glance.

"Hmm," he said and lowered the bowl.

The kitchen workers stared. "What is it?"

"I'm working on it," he said. He looked into the distance. "I think it's a grub of some kind."

"I didn't think grubs got that big," Lucy said.

"No," Bell said. "Neither did I."

Bell looked again. The grub was large, fleshy and blood red. Five inches long.

"Where did it come from?" he asked.

She shrugged again. "The table."

Bell looked at the table. There were watermelons, and apples, and bread, and the partially disarticulated hock of a deer. Several bunches of blackened bananas made a mountain in the center, along with a smaller mound of more exotic fruit shipped in from Lord-knew-where.

"It could have come in with anything," she said. "I found it crawling along the edge of the table there." She shuddered. "It was moving pretty fast."

Bell retrieved a glass jar from the cabinet, opened the lid, then dragged the bowl across the edge of the table so the strange grub dropped into the jar. He stepped outside and plucked some grass, put the grass inside, and closed the lid. Poked holes.

He took the jar across the zoo to the castle and placed it on a shelf in the back room.

"The castle" was the name used for the entomology building. Bell could only imagine what the structure's original use had been, with its block construction and odd turrets; but whatever that long ago intent, it now housed all manner of creepy crawlers—hissing cockroaches, and ant farms, and snakes, and lizards, and frogs. Anything that required darkness or careful temperature control.

The building was a box within a box. There was an open, central area ringed on three sides by walls and exhibits—and just behind these walls was a space called the back room, closed to the public, which was actually a single narrow hall that conformed to the outside perimeter of the building, a gap space where you could access the back side of the cages. At the far end of this hall, in a dead-end spot furthest from the entry door was a table and chairs, a TV, a desk and several terrariums. These extra terrariums were where the sick were boarded, those unfit for public examination.

Bell did the rest of his chores for the day. In the evening he checked on the grub. It was still there, happily curling up the sides of the glass jar. Bell had studied entomology in college, and he'd never seen anything like it; the insect's sheer bulk seemed to push the cubed-square law to its limit. Perhaps beyond its limit. He hadn't thought insects *could* be that big. When he opened the lid, the grub reared up at him, strange mouth-parts writhing.

Bell was in charge of the castle, the petting zoo, and the convicts. This had not always been the case. He was in charge of the castle because he was the only zookeeper who'd taken college-level entomology. The petting zoo was meant as an insult. And the convicts were punishment.

The convicts came in most weekdays. You could point them out in the parking lot—men and women who were there too early, hours before the gates opened. Bell would feed the insects, drink a cup of coffee, and then walk to open the front gates.

"Here for community service?" he'd ask.

"Yeah," they'd say.

Sometimes there were two or three. Sometimes none. They handed Bell their paperwork, and Bell passed it to the zoo superintendent at the end of the day.

The number of hours worked was the all-important statistic. Because they all had a number they were working down from; 150 hours, 200 hours, 100 hours.

Sometimes they talked about their crimes, and sometimes they didn't.

Bell never asked. Not his business.

Bell often talked to himself in the bathroom mirror.

"In this world," he said, "you are not an apex predator. Humans are, as a species, but you, yourself, are not."

You do not always win. Problems are not always solved.

There are defeats and surrenders. Small but important.

Last winter, they gave up heating the bedroom. They sealed off the back of the trailer and slept on the sofa. They learned the science of climbing into the bathtub. The bathtub was metal and descended a few inches through the floor, arctic air right beneath. No matter how hot the water got, your butt and legs would start to freeze if you sat still too long. You had to lift yourself up now and then, let the hot water get under there. Lower yourself. Wait. Repeat.

"It's like not even being *part* of the food chain," Bell said aloud one cold night, eating burritos in the kitchen.

They hadn't spoken to one another that morning. His remark about the food chain was one of two things they said to each other all day long.

Sometimes he opened up the bedroom door and exhaled just to see his breath cloud the room.

He wanted her to ask about his food chain remark. Wanted to explain it. Wanted her to understand.

"The food chain—" he began.

"I get it," she said.

That was the second thing that got said. Her breath made a cloud even though they were in the kitchen.

Bell didn't dare tell Lin how much he loved his job, not anymore. He told the mirror instead.

"I love my job," he said. His reflection said it, too, it seemed.

Like the zoo, their life at home had been built on various pretensions. Pretending there might be gas money. Pretending they could afford to eat better, but chose not to. Pretending that Lin still thought it was important to have a job you liked. Loved. Whatever.

She had quit pretending. Somewhere behind her mask was the Lin who thought "If you loved me you'd do what it took for me to live a better life," and that Lin had surfaced. Unmasked. Through fucking around.

Classified ads appeared, taped to the fridge.

Sales. Landscaping. Power-washing trucks. All kinds of things you could do with a degree in biology.

"It's easy," Bell told her, "to lose track of what's really important."

She didn't have to say that having heat and electricity were important, too. Instead, never breaking eye contact, she grabbed her coat and her vibrator and locked herself in the bathroom.

Library clerk. Barista. All things that paid more than working at a zoo. Mexican cook. Skycap for a Mexican airline. Didn't matter if you weren't Mexican.

It was amazing, thought Bell, how much pretending went on in a zoo.

The public pretended the cages were jungles, savannah, desert, or snow.

The animals pretended that they were not interested in the public. The public and the zookeepers worked together at pretending that the zoo was not, when you got right down to it, just carefully engineered cruelty.

Sometimes the animals forgot to pretend. Like when babies were born and wouldn't eat. Because they knew captivity when they saw it. Felt it. Forgot to pretend life was worth living.

Like when the llama attacked Bria Vagades.

Bell was there when it happened.

It wasn't like an animal attack in the movies, all snarling and snorting, blood and fur. It looked almost comical. One second Bria was lifting the rock-shaped hatch which concealed the garden hose, and suddenly here came Nunez the llama, ridiculous and splendid with his two-tone black-and-gray coat, rearing on his hind legs, waving his front hooves like a boxer. He was on her before she saw him, and she screamed.

"Ow!" she screamed, and "Fuck you, Nunez!" before she got a grip on herself. The zoo was closed, but there were strict rules about losing your cool where the public might see, might panic.

Nunez lost his balance, came down on all fours, still advancing, sniffing the air. Reared up again, hooves waving as Bria covered her head, backing away, feeling behind her for the door.

"He didn't want her in the enclosure," Bell told John Lorraine, another zookeeper, later on in the cafeteria. "It was obvious."

"It's never obvious. It's sloppy, is what it is, assigning human motives to animal behavior."

"Territoriality is an animal behavior," Bell answered, chewing peanut butter crackers. "It's an animal motive."

"What's sloppy," John said, "is pretending to understand *why* all the time. Why they do *anything* they do."

"Because it's mating season," said Bell. "That's why."

John Lorraine's eyes narrowed. "And she went in the enclosure by herself? That's sloppy, too. These animals aren't pets."

But Bell knew some of the animals *were* like pets. Bad pets. Pets you couldn't trust. "You should write a fucking memo," he said.

"You should shut up."

Bell agreed. He said "Yep."

The grub wasn't like a pet. The day after Bell placed it in one of the large terrariums, it began to construct a papery cocoon.

During his evening break, Bell sat in the back room and watched the grub work. He checked the zoo's entomology books but couldn't find a match. None of the pictures looked anything like the strange insect in the terrarium. The cocoon only deepened the mystery. Whatever this thing was, it was a juvenile.

There were four main groups of insects that had a larval stage of development: Coleoptera, Lepidoptera, Hymenoptera, and Diptera.

The thing in the terrarium was no caterpillar, so Bell could rule out Lepidoptera. The grub's size seemed to rule out Diptera. Which left Hymenoptera and Coleoptera. Wasps and beetles. But it didn't look like any wasp or beetle grub he'd ever seen.

Most grubs didn't have eyes. Most grubs didn't have mouthparts like that.

At the end of its third day in the terrarium, Bell arrived to find it had sealed itself into its papery chrysalis, and just like that, the grub subtracted itself from the world.

The next day, there was an addition to Bell's army of community service workers. A late arrival.

Bell was on one knee, mixing food for the lemurs, when a shadow fell over the bucket. Bell shaded his eyes and looked up.

"They told me to find Bell. *'Report to Bell,'*" they said. Said Bell was young. You look like you might be him."

The shadow had a voice like raw sand.

Bell stood and shook hands.

Shaking hands, the first thing he noticed was scar tissue. Burn scars splashed across hand and wrist. Both hands, Bell observed. Both wrists.

Leather-skinned. Scrambled white hair. Eyes blue like a cutting torch. If a bomb could explode and come back as a person, it would be this guy. Just looking at him, sunburned and fire-burned, made Bell thirsty. They sat down over Cokes at the Savannah Café, where Bell learned that the bomb's name was Cole. Learned that, at sixty, Cole was by far the oldest community service con to grace the zoo.

Then he put him to work hosing down empty cells in the elephant house, beginning with the Cape Buffalo.

"Bullshit," rasped Cole, when he saw the cell.

Bell must have looked startled.

"Literally," Cole explained, waving the hose at the floor. He smiled, revealing teeth like rubble. Smiled and winked.

It was like being winked at by war.

Just as the lions were star attractions for the tourists, Cole became a star attraction for the staff.

He was scary, like the lions. Like the lions, he seemed to keep most of his energy bottled up in some soft, invisible engine. It was an uneasy feeling, locking eyes with a lion. Same with Cole.

You couldn't talk to a lion, though. Couldn't ask him how he came to be at the zoo. But you could ask Cole, if you were nosy enough.

Bell didn't ask.

Bell stood in the dark tunnel with Cole. "The baboons are smart," he said. "You have to be careful."

Cole nodded.

"They can throw their poop at you. They can bite. You have to lock both sets of doors. There is a procedure you have to follow, and you should never be in the enclosure with them."

Cole nodded again.

"It's very important. Do you understand?"

Cole nodded again, but Bell wasn't so sure. Several years earlier there'd been an incident in the cat house. The exhibit had been in the midst of repairs, and the lion had been allowed access to its run overnight. This normally wouldn't have been an issue except that the adjacent run had been under construction. The door separating the bobcat run from the lion run was made of thick plywood—a temporary measure which was fine to keep the bobcats in. But insufficient, apparently, to keep the lion out.

The next day, they found the plywood partition shredded, and the lion sleeping in the bobcat cage, blood coating its muzzle. All the bobcats were dead.

Zoos are dangerous places.

Dangerous for the animals. Dangerous for the zookeepers.

Cole had a thousand hours of community service. Bell had never seen a number that high. It would take him a year to finish it.

When Cole had been at the zoo for a week, the zoo superintendent pulled Bell aside. The superintendent didn't like Bell much. She wore a serious expression. "The older guy, Cole, is he a good worker?"

"He's fine."

"He's going to be here for a while."

"Yeah," Bell said, "I know." He could see the gears moving behind the superintendent's eyes. *A free long-term worker. A worker that didn't need to be paid.*

"Perhaps we could give him more responsibilities," she said.

For weeks, Bell checked on the cocoon, waiting to see what would emerge.

It happened on a Monday. There was a buzz in the room when Bell entered. A buzz like one second before an electric light went bad; only this light kept going bad, second after second—an electrical hum that did not fade. Bell looked in the terrarium and saw it.

Huge.

Winged.

Bright red, but the mouthparts were black.

"Hymenoptera," he whispered. "Of some kind."

The summer stretched on. Bell trained Cole how to be a zookeeper. On their breaks they sat in the back room.

When the insect first hatched, the question became what to feed it. Bell tried a little of everything: sliced bananas, and apples, and small chunks of meat. Some of the fruit on the table came from exotic locales, and it was easy to imagine the grub stowed within the corpus of some melon from Central America—and it was easy to imagine how such a melon might go quickly bad, and soft, and end up on the zoo's table as discarded produce.

Weeks passed, and the insect thrived.

Even Cole took an interest. "Pet wasp?" he said as he helped Bell clean out the nearby lizard cage.

"I'm not convinced it's a wasp."

Several days later Bell found Cole looking through the glass. Cole was the one who noticed it first.

"What's that?" he asked. Bell looked. "I'll be damned." The wasp-thing sat perched on a small branch in the terrarium, oddly jointed legs flexed, wings slung like swords over its narrow back. Hanging beneath the insect, dangling from a fibrous string, was a small pod of what looked like dried brown foam.

"What is it?" Cole said.

"I think it's an egg case."

Cole surveyed the terrarium again.

"So there's two of them things?"

Bell shook his head. "There's just the one."

"Maybe she was already fertilized."

This particular convict was smarter than he pretended to be. Bell caught his reflection in the glass, blowtorch eyes darting back and forth.

"It's not likely," he said. "She is female, but the reproductive stage usually begins after metamorphosis, not before. And this thing has been alone since it hatched."

"Santa Maria of the bugs," said Cole, cracking a shipwreck smile.

Bell laughed. "It's less than a miracle in the insect world," he explained. "It's called *Parthenogenesis*. Some kinds of Hymenoptera can—" "Hymen-who?"

"It's an insect clade. Ants, bees, and wasps. Certain species can reproduce without males. Worms can do it, too, and some lizards. But Hymenoptera are the champs."

Cole straightened.

"Let's hope that doesn't catch on."

Bell thought it over. Reproduction and marriage and wives and such.

"Might not be so bad," he muttered.

"What's that supposed to mean?"

"Nothing."

Bell contacted the university. He wrote a letter to the biology department describing the insect and the circumstances of its arrival. A week later he received a reply. The note was short and polite: "It's probably a mud dauber."

Bell wadded the letter and threw it in the trash. "I know what a mud dauber looks like."

One evening a few weeks later, he found the insect dead. Even in death it looked formidable, with a head the size of a dime, and a body like a smooth, slick walnut.

For the first time, he dared to touch it. With its legs spread out, it was nearly the size of his hand. He jabbed a pin through its abdomen and stuck it to a small cork. The legs sagged under their own weight. He looked inside the terrarium at the egg case, wondering if anything would hatch from it.

Months passed, the egg case forgotten. Bell and Seana took turns training the old man. Seana didn't like Cole, and didn't pretend she did.

In the spring, the eggs hatched. There were a million tiny grubs, just like the original, only smaller. Bell watched them wriggling through the sawdust he'd put in the terrarium.

"These more of your wasps?" Cole asked.

"They will be."

They watched them writhing for several minutes.

"What do they eat?" Cole asked.

Bell thought about this for a moment. The adult form of an insect often ate a completely different diet than the juvenile.

"I have no idea," he said.

Feedings could be tricky.

When Bell was first hired by the zoo, he'd been put in charge of feeding the raptors. Raptors weren't dinosaurs, though, like you'd think, with a name like that. It turned out they were big damn birds. One of them was a golden eagle.

All went well for the first few days. The golden eagle ate about five rats a week, but it was fed every day. Which would have been fine except that the uneaten rats had to be removed from the enclosure.

This idea didn't bother Bell until the moment he first went to do it. He stood at the cage door and looked at the big damn eagle, and it occurred to him that he was about to go inside a big damn eagle's enclosure and take out its food. It occurred to him what might happen if the big damn eagle felt suddenly partial to that food.

He stared at the eagle. He stared at its talons—two-inch daggers strong enough to pierce bone.

Bell walked down to the zoo superintendent's office. She was unmoved by his concerns.

"I'm not sure I'm comfortable with it," Bell said.

She waved that off. "You've got nothing to worry about." Then she went back to her paperwork.

"But how do you know the eagle won't attack?"

"It'll be fine," she said, not bothering to look up. "Nothing like that has ever happened before."

A preamble to every scar story he'd heard at the zoo.

"I'm not going to do it," he said.

She looked up from her papers. She sighed. She weighed her options. "All right," she said.

The next week he was put in charge of the petting zoo. This was meant as an insult.

When he complained, pointing out that his particular skill set could surely be put to better utility, she only nodded sympathetically.

Then she put him in charge of the convicts, too.

Bell divided the newly hatched grubs into three groups, in three terrariums. In one terrarium, he dropped only fruit. In another, he dropped chunks of bread. In the third terrarium he dropped meat.

Insects tended to specialize in their diets, so he thought there was a good chance that two of the terrariums would starve. But then at least he'd know what they ate.

The grubs, however, surprised him. All three terrariums thrived—though the grubs given meat grew fastest.

Two months later, the grubs all began to spin cocoons. As if by agreement, they all started their nests on the same day.

That night, as if to celebrate the milestone, Bell committed a budget crime. He stopped at McDonald's for a bite on his way home, knowing that tuna salad was all they had in the fridge.

He was trapped and doomed, once he'd spent the money.

"Spend whatever you need to," Lin said. "Just make sure you tell me about it."

Lin was the official banker of their marriage.

"Just tell me about it" was the trap, because if he spent money and told her, she got mad. She might get loud, she might stay quiet. Either way, when Lin got mad, she fed on her own energy like a hurricane, getting louder and madder. The hurricane usually blew until she charged out the door and drove away, still screaming. Hours later, she'd return. Maybe still mad, maybe not.

One of these days when she came back, Bell would be gone.

This thought came from an increasingly vocal part of his brain. The part where he'd swept so much crap under the carpet.

A week after his crime, she dropped a bank statement in his lap while he sat reading. They were both reading a lot, these days. The cable company had run out of patience.

"What?" he asked.

"It's highlighted."

Shit. He'd forgotten.

MCD Store #1635.

"You didn't give me a receipt for that."

"Thought I had. Sorry."

He was sorry. What else could he do? Here, he thought, was where a rational person would let it go. But not Lin.

She yelled, storm winds building. How, she wanted to know, was she supposed to know how much to spend on the rent and the car and the power company and the phone company and the fucking grocery store when she didn't know how much *he'd* spent on whatever big important things he needed to spend money on. Like a Big

Mac, apparently. She didn't remember him asking if she'd like a Big Mac, too, because he was too busy being a selfish, irresponsible asshole and then hiding the receipt.

He could tune out the yelling, until she made accusations like that.

"I forgot," he reminded her. Now he was pissed. This was going to be bad.

The louder she got, the louder he got. Eventually, she was shrieking at him. A responsible voice inside him grew worried. She was really, really wound up this time. The tiny voice said that he couldn't let her drive off like this. She'd hurt herself. Hurt someone.

It was a zookeeper voice. The voice that knew you couldn't let the animals run wild, no matter what.

She took a bathroom break, still yelling, and Bell took advantage of the opportunity to hide her car keys. Deep inside a box of stale Triscuits.

Sure enough, when she emerged, she hunted for her keys.

Lin was notoriously bad about where she laid her keys. They could be anywhere. She hunted.

For ten, fifteen minutes, she looked everywhere. Everywhere she might rationally have put her keys. She stopped yelling about Bell and started quieting down.

The quiet, Bell knew, was deceptive. It did not signal calm. Just quiet. Like a fire that gets into the walls, hidden, until someone opens a door.

Bell realized he had made a mistake. She would keep looking forever, that was the problem. Sooner or later, he was going to have to tell her he'd hidden her keys. And she'd get worse. Get louder. The storm of the century.

In some ways, he felt sorry for her. She was kind of crazy, really. More than kind of. Poor girl. But what a bitch. He almost said it aloud.

In the end, she retreated to the bathroom again, and Bell put the keys in the silverware drawer. Silently, like a cat burglar.

She came back out, and the silverware drawer was the third place she looked. She had already looked there. Several times. And she knew it. Bell knew she knew it.

"You fucker," she whispered, almost choking. Near tears.

Remorse! He was no match for tears. He melted, moved toward her. He'd been protecting her.

She whipped the keys at him, catching his left ear as he ducked.

It was loud again for a while. Bell picked up the keys and opened the trailer door. Lin had grabbed her purse.

"Give them here!" she screamed.

Bell ignored her.

He drove off, this time.

He used up ten dollars of gasoline just driving in circles. He enjoyed the waste. Enjoyed the drive. Talked to himself.

When he circled back, at last, he found her shivering on the steps.

She'd been locked out.

It was a cold fall evening.

Remorse, again.

This was not fucking working.

Mating is complicated.

Mammals click.

Personalities come together, and they click, sometimes. Other times they don't.

The day after he and Lin un-clicked so badly—the day after he locked her out of the trailer—Bell and Cole sort of clicked.

Bell couldn't have said what did it, exactly. He was on the roof of the walrus tank, watching the pinnipeds heave their awkward bulk across wet concrete.

Cole climbed the ladder and joined him. In the enclosure below, two males belled at each other, bumped chests.

The smaller male backed off, retreating to the tank, but the larger walrus followed. It slipped its hulking form into the water and was suddenly graceful. Like a different animal entirely.

They stared together in silence until Cole said, simply "Well, Goddamn," and they both cracked smiles.

"Reminds me of my dad growing up," Cole said. "Big and mean. Harder to get away from than you'd think."

Bell cocked an eyebrow.

"Oh, a real tough guy," Cole continued. "Beat my ass until I got bigger than him." Cole smiled war again.

Bell was unsurprised when Cole showed him a silver flask and asked if he'd like a sip.

And Bell had a sip. Just one.

But it was enough to set the stage for a detour, after closing, to a nearby grill with a liquor license. Bell didn't feel like going home to Lin; and Cole didn't feel like going back to the halfway house. He wasn't due for an hour, yet.

At the bar, Bell lit a cigarette and found himself talking about Lin. He told Cole all about the money problem, and the fight.

Cole's blowtorch eyes burned as he listened. He looked terrifyingly wise, all of a sudden.

After two beers, Bell found himself saying out loud the thing he could barely admit to himself, "I wish I'd stayed single, man. I really, really do."

Just then, a woman wearing fifty pounds of makeup came in, clunked across the floor in square heels. Cole winked at her.

She said something to the bartender and walked back out.

Bell watched her go. The setting sun blazed straight in through the door as it wheezed shut. Bell winced and—too late—shaded his eyes. Momentarily blind, blinking, Bell groped for his beer.

Into this momentary darkness, Cole said, "I crashed a helicopter, in case you wondered."

Bell blinked. Cole's eyes became visible, twin coals.

"Huh?"

"I noticed you didn't ask about my hands. Or why I was in jail. You never ask *nobody*. It's actually pretty conspicuous, the way you don't ever ask how anyone came to community service. You just give 'em some shit to do and mark down their hours."

Bell must have looked troubled. Purple circles rotated in the dark, in his brain.

"No, it's cool. It's cool you do people like that. Makes 'em feel normal. But not asking the way you do, it's kinda obvious how bad you want to know, so I'm telling you. I wrecked a helicopter."

Cole was right. Bell wanted to know. Wanted to know quite badly. Hadn't realized until this moment.

"All right," he said, by way of encouragement.

It took fifteen minutes for Cole to tell about Brazil.

He was a helicopter pilot, to begin with.

First in the army, then for the president of a frozen chicken company, then for United Airlines, on contract with Canadian Railways, shuttling engineers from checkpoint to checkpoint. It was the kind of solitary work he enjoyed. The engineers were usually stone tired. Quiet.

Then he'd crashed his United Airlines helicopter.

The kind of thing that could happen to anyone; his tail rotor crapped out and he

had to autorotate down from eight hundred feet, spinning and yawing with three cursing, pants-pissing passengers. Rolling sideways at the last second, landing sideways, splintering the rotor, rupturing the fuel tank.

No deaths. The only serious injury was Cole, who remained behind until all three passengers were out and running, safe. Sustained burns over 25 percent of his body, including the splashy scar tissue on his left hand and wrist.

Bell began to ask a question, but Cole anticipated him.

"The other hand was something else," he said. "Something later."

United Airlines hadn't been cool about his benefits, and the hospital bankrupted him. Could barely afford the surgery that let him *use* his hands, let alone reconstruction or cosmetics.

Which was why he started siphoning aircraft fuel. You could make a lot of money on the black market, selling aircraft fuel at half-price.

A dangerous business, though. No honor among thieves and so on; someone turned him in, and a federal warrant came looking for him.

The Feds called him while he was in the air. In Virginia, near the coast. On his way to Richmond for a pickup.

"Put down at Richmond International," the FBI told him.

And Cole had flown out to sea, instead. How stupid did those bastards think a guy was?

Stupid enough, he supposed, to get caught fencing felony amounts of helicopter fuel.

Cole flew out to sea. Flew *into* the sea. If the feds wanted him, they were going to have to work for it.

Bell must have looked at Cole's right hand.

"The fuel tank ruptured when I hit the waves," said Cole, draining his beer. "Set the water on fire. I could either surface and tread water in the burning fuel, or stay under and grow gills. Happened when I was twenty-seven. They gave me nine years."

Bell did the age math, but before he could ask, Cole said, "Oh, I was in and out after that. Assault, mostly. The last one for a bar fight. Guy got his eye socket broken, and the judge gave me extra—those women judges, they're the worst. She said my anger gonna burn me up some day." Cole smiled war again. "But that already happened, ain't it? Besides," he said, and took a long swallow of his drink. "Not all that burns is consumed."

He slammed the empty glass down on the table. "I gotta scoot. If they lock my ass out, I'm fucked."

Very quickly, Cole was up and out the door. Bell turned and watched him go, and the sun hadn't quite set yet, and Bell's eyes got nailed a second time.

Blind as a bat, Bell thought.

Good zookeeper that he was, Bell knew bats weren't really blind, and he said so.

"What?" called the bartender. Also, Bell thought, a zookeeper of sorts.

"Bats aren't really blind," Bell repeated.

Never get drunk with the convicts, Bell lectured himself.

It was a bad idea in so many ways. It was unprofessional. Besides, if you got to be drinking buddies with one of them, even going so far as to sip whiskey with him on top of the walrus tank—a firing violation by zoo rules—then what do you do afterward if the convict does something you should report him for? Something else.

A week after the bar, Bell arrived at work and found Garland, the maintenance chief, waiting at the gate.

"There's an issue," said Garland.

"An issue?"

"With your friend. He's drunk."

"Where?"

"I have him shoveling the camel enclosure. Figured that would keep him out of the way until he sobered up a bit." Garland paused. "Only I think he's a lot worse off than I thought."

A headache came rumbling up on heavy treads. Bell sighed.

Garland looked uneasy, too. It was bad news, Cole being drunk. Especially if Garland had noticed it and let him work anyway. It was like Watergate. A lot of people could wind up in trouble before this was over.

"I thought I'd wait and see what you wanted to do," said Garland as they walked uphill through the zoo. "I didn't want to make out a report if it was just . . . well."

Bell understood. The old man was scary.

Bell nodded. "I'll handle it."

At the camel enclosure, Bell called out Cole's name and the old man approached, shovel in hand. He smelled like rum.

"Yeah?" The question had an edge to it. Like Cole knew he was in trouble. For a moment, looking through the bars, Bell saw something aggressive in his eyes. Something leonine.

Bell explained how it would go.

Cole would drop the shovel.

He would avoid speaking to anyone.

He would leave by the back entrance. Now.

"So I'm fucked," Cole said.

Bell shook his head. "You called in sick today is all. This never happened."

He should be firing this guy, Bell knew. Why didn't he?

He could see it now. He'd tell Cole to get the hell out and not come back, and Cole would go to Koverman and say Did you know I drank whiskey with Bell during work hours on top of the walrus tank?

"I'm fucked," Cole repeated. He swayed.

Bell frowned. There was something that started out to be a long silence. Then Cole whispered, "I'm not going back to jail. I won't do it."

Bell led him out. "Come back tomorrow," he said. "Sober."

It took exactly four weeks for the cocoons to hatch. There was a sound like electric lights going bad, and Bell stepped in the back room. He stared for a long time. The terrariums teemed with strange new life. Each glass box seemed to house a different creature entirely. Strange wasp-things, and things . . . not like wasps. Things without names. Some larger, some smaller. Some with wings, some without. All were red and black.

"Impossible," he muttered. They couldn't all be the same species.

His first instinct was to call the university. Then he remembered their note about mud daubers. Screw the university.

Besides, instincts were for animals. He'd solve this on his own.

He could figure it out, Bell was certain. He knew a lot about insects.

He knew insects had been among the first living things to walk dry land; they'd seen the rise and fall of dinosaurs, the birth of flowering plants. Humans weren't the first species to farm, or to domesticate animals, or to war. Those milestones belonged to insects. When humanity began its clumsy, ongoing experiment in agriculture, the Attine ants of South America had already long since perfected it—cultivating vast fungus beds in underground chambers in their nests, seeding carefully tended gardens with the clones of a fungus that traced back more than thirty million years.

Another species of ant, *Lasius flavus*, managed large herds of domesticated aphids.

The aphids were kept in subterranean corrals where they grazed the roots of plants and were milked for their nutrient-rich honeydew.

Some termite mounds sprawled more than thirty feet in diameter, housing tens of millions of individuals, all bound up in a single sophisticated caste system. Soldiers of *Macrotermes bellicosus* had jaws so huge they couldn't feed themselves, but instead relied on lower-caste workers to lift food to their mouths.

Insects build cities, and farms and superhighways. Slant your eyes and look hard enough, and you'll see a level of organization that can only be described as civilization.

Bell had often thought that humans had achieved their conspicuous position in the world not because of how perfectly adapted they were, but because of how weak, how clumsy, how fragile they were. How unsuited to existence.

One species of dairying ant secreted an enzyme from its head that was carefully rubbed onto the aphids during the milking process. The enzyme disrupted wing development, preventing the aphids from ever flying away.

Where humans came up with external solutions—like building fences—insects often found a more elegant solution. A biological solution.

They'd had the time to do it.

Determined and cautious, Bell fed the grubs every day and wrote down his observations.

But still, Cole was the one who noticed it.

When Bell finally understood, his mouth dropped open. "Holy shit," he said.

He looked at his notes.

He'd fed the insects one of three different diets. The insects which, as grubs, had eaten bread did not now have wings, but stunted twists of chitin. Their color was dull red, like rust. More beetle-like, less wasp. Now, as adults, they *still* preferred bread. The fruit-eaters still ate fruit. They were large-bodied and short limbed, with stumpy wings that buzzed loudly as they made awkward flights inside the terrarium. Bell could imagine them making those same flights between distant stands of fruit.

The meat eater was the most strange. Blood red, with wings like blades—mouth parts huge and angular.

"They adapted," Bell said. "They adapted to the food sources they ate as grubs." Bell shook his head in disbelief.

"Fast learners," Cole said. Then he moved as if to stick an experimental finger in the meat-eater cage, but Bell said "Don't."

Seana, when he showed her the hatchlings, said "Can that happen?"

"There it is," he said. But in his heart of hearts, he knew she was right to doubt. Like a million years of evolution in a single generation. No species adapts that quickly. It was a bad movie. Junk science. Not possible.

"But there it is," he repeated.

The insects lived for more than a month. They buzzed, or crawled, or flitted around their cages. Over the course of a single week the following month, they took turns dying.

The meat eater lived longest. After each die-off, Bell found egg cases. He cleaned the terrariums, and put the egg cases back inside. Then he waited to see what would hatch.

Late one evening, Seana climbed up the ladder while he was in the barn loft at the petting zoo, checking the hay for rot. Climbed up and stood behind him until he turned around, then stood on her toes and kissed him.

If the zoo hadn't been closed and nearly deserted, if Bell hadn't known for sure that no one was likely to venture into the petting zoo, let alone climb into the loft,

then maybe it would have happened differently. Maybe Bell would have kissed her back, because kissing would have been all that *could* happen.

But the zoo was closed. Bell did know. And it did happen the way it happened.

"I can't," he said.

She pulled away.

"I want to," he said.

She looked at him, waiting.

Beneath them, the horses shuffled. Made noises. Kicked their stall doors and talked to each other in soft equine language.

He thought of Lin, home in their trailer. "I can't," he said again.

A black mood seized Bell on the way home. He drove the darkening highway, following his headlights into space. He pushed the old beater faster, watching the speedometer climb to seventy, then eighty. He took the curves without easing off the accelerator. The tires squealed, but held the road.

His mind was a movie of loves and hates. He loved and hated his job. Loved the animals, but hated the conditions. Hated that he couldn't afford to live on what he was paid. *When you're young, he thought, they tell you that if you get a degree, everything else will fall into place. But it's not that simple, is it?*

Nothing—not one thing—had worked out like it was supposed to.

He thought of life at home, a second maze of contradiction. He was tired of being alone and together at the same time. He wanted to be free, but there was no freedom. No way out. He felt like an animal with a trapped limb. He understood why animals chew their own legs off. He had a recurring fantasy of being robbed, and putting up a struggle. If he were held up at gunpoint, he had decided, he would not cooperate.

He didn't know what to think of Seana, yet. So he didn't, at all.

Red like rupture. Blood squirm, a coagulation of grubs across brown terrarium stones. The egg cases pulsed like clotted hearts, spilling strange new life. Bell stared through the glass. Each cage told the same story.

The grubs were a centimeter long. Even as small as they were, Bell could see the mouth parts working. Each grub identical. As far as he could see, the differences that had been so apparent from cage to cage in the adult form were now absent from the next generation. The grubs were all the same, as if a reset button had been pushed. It was only the adult form that seemed vulnerable to change. Bell opened his sack lunch. He took out his apple and sliced it into a dozen pieces. He dropped a slice into the first cage. The grubs responded immediately, moving toward the fruit. They swarmed it.

Bell fed the grubs first thing in the morning.

He decided to turn it into an experiment. He stole a sheet of sticky-labels from the staff room and stuck a label to the side of six different terrariums. On each label, he wrote a different word.

The grubs labeled *fruit* were fed fruit; the grubs labeled *meat* were fed sliced meat. The grubs labeled *control* were fed a mixture of foods.

The grubs with the *cool* sticker on the side of their terrarium were fed the control diet—but were also placed in the refrigerator for an hour a day while Bell did his chores. An hour wasn't long enough to kill them, but it was long enough to impact their physiology. They grew slower than the grubs in the other cages.

If these insects could really adapt to their environments, Bell was going to see how far he could push it.

He'd see if diet was the only pressure they responded to.

The grubs labeled *heat* were in a small glass terrarium placed on the floor near a space

heater. Bell put his hands against the glass. It was hot to the touch. These grubs, too, seemed stressed by the temperature. But they still grew, doubling in size every week.

The grubs labeled *carrion* were fed the occasional discarded rat from the golden eagle enclosure. These were the grubs Bell found most interesting. They burrowed into the dead rat and ate it from the inside out.

Charles Darwin had believed in God until he studied the parasitic wasp *Ibalia*. Darwin wrote in a journal: "There seems to me too much misery in the world. I cannot persuade myself that a beneficent and omnipotent God would have designedly created wasps with the express intention of their feeding within the living bodies of caterpillars." Darwin found it particularly gruesome that the *Ibalia* grub only gradually consumed the living tissues of its host—taking a full three years to complete its meal, saving the vital organs until last as if to extend the host's suffering. Darwin couldn't imagine a God who would create something like that.

Bell could imagine it.

He thought of the reset mechanism. He imagined a single insect species with multiple phenotypes already encoded in its genome—a catalogue of different possible adult forms. And all it took was a trigger to set the creature down its path.

"Maybe it's like blind cave fish," he told Seana one evening.

He watched Seana's face as she peered through the glass.

"Cave fish have most of the genes for eyes still carried in their DNA," he said. "All the genes required for lenses, and retinas and eyelids, all the genes except for the one crucial ingredient that starts eye development in the first place. If you cross-breed two different populations of blind fish, sometimes you get fish with eyes."

"That doesn't make sense," Seana said.

"It does if the blindness is recessive, and the two populations are blind for different reasons."

"But you said these things aren't breeding."

Bell ignored her, lost in thought. "Or they're like stem cells," he continued, "each carrying the genes for multiple tissue types, multiple potentials, but they specialize as they mature, choosing a path."

He leaned forward, tapping his finger on the glass.

"Where do you think they come from?" Seana asked.

"The fruit maybe. Shipped with the bananas. Central America. I'm not sure."

"Why can't you find it in books?"

"There are millions of insect species still un-described by science. Besides, maybe it has been described. Some version of it. I mean, how would you really know?"

Later, searching for reasons to avoid going home, Bell ran down his closing checklist twice.

On his second round, he found the outer door to the lemur tunnel wide open.

He had locked it himself. *Checked* it himself.

His inner alarm went off.

Zookeepers developed inner alarms, or they developed scars.

He stepped through the door, and let his eyes adjust to the dark, to the long, mildewy tunnel which ran under the moat, to the lemur island.

At the end of the tunnel, bright light, because the door at the island end was open, too.

In the middle, a silhouette. Who...?

"Hey!" Bell shouted.

Several silhouettes. Sharp, jabbering shadows. Five or six lemurs hopped and shrieked.

The shadow in the middle wound up like a pitcher and threw something.

A yelp. The lemurs howled and ran.

"Cole?" called Bell, starting down the tunnel.
 One lemur didn't run. It whirled in confusion, chattering.
 Bell's eyes had adjusted. The shadow grew details. Cole.
 Cole, with a handful of smooth, white landscaping stones, eyes wide with rage.
 "What the fuck are you doing?" Bell shouted.

"They threw shit at me. They threw their fucking *shit*."

"Jesus Christ—!" Bell yelled, lurching forward.

Cole turned, arm pistonning in the dark.

The stone whistled past Bell's ear and struck hard against the outer door. The tunnel echoed.

Bell froze.

Cole stepped toward him. "You watch how you talk to me," he said, and for a moment they stared at each other, waiting to see what would happen. Then Cole's eyes changed—the rage blown out of them like a gust of wind. Cole brushed past him and was gone.

The lemur groped its way back into the light, back to the island.

Bell unfroze, closed up, and said nothing. He'd have to say something, wouldn't he? Something would have to be done. Right?

He made a mental note. In the future, he wouldn't let crazy people into his life. He meant it.

Metamorphosis is magic. Darwin had known this, too.

Sometimes it is a dark magic.

The metamorphosis of a tadpole into a frog. A grub into a wasp. A friend into an enemy.

Bell watched the grubs feed. By now they'd grown huge. Some approached five inches in length, blood red, large beyond all reason. Soon they would spin their papery cocoons. Turn into whatever they would turn into.

Bell pondered the advantage of such an adaptive mechanism. Perhaps it was a way to guard against overspecialization, a reservoir of adaptive potential. Evolution is a slow process, and when conditions change, populations take time to react. There is a lag; species that don't change fast enough die out.

Bell knew of several kinds of island lizard that reproduced parthenogenetically. Such species, when found, were always young, isolated, at risk. They were aberrations outside the main thrust of evolution. Most were doomed, in the long run, because sexual reproduction is a much better way to create the next generation. In sexual reproduction, genes mix and match, new phenotypes arise, gene frequencies shift like tides. Sexual reproduction shuffles the genetic deck from one generation to the next.

Parthenogenetic species, on the other hand, are locked-in, playing the same card over and over.

But not the insects in the back room.

The insects in the back room seemed to have a whole deck from which to deal, parthenogenetic or not. Such insects could adapt quickly, shifting morphotypes in a single generation. And then shift back the next. It was the next logical step—not just evolution, but the evolution of evolution. But how was it possible?

Bell thought of Cole, of what made men like him. That old argument, nature vs. nurture. In another time, in another place, Cole would have fit in. In another time, maybe Cole would have been a different person entirely.

The descendants of Vikings and Mongols today wore suits and ran corporations. Were veterinarians, or plumbers, or holy men. Perhaps tomorrow, or a thousand years from now, they'll need to be Vikings and Mongols again.

Populations change. Needs change. Optimums change. And it all changes faster than selection can track.

From a biological perspective, it would be easy to produce the same kind of people again and again. Stable people. Good people. Again and again, generation after generation—a one to one correlation between gene set and expression.

But that's not what you find when you look at humans.

Instead there is a plasticity in human nature. A carefully calibrated susceptibility to trauma.

What looks like a weak point in our species is in fact design.

Because the truth is that certain childhoods are *supposed* to fuck you up.

It is an adaptive response. Wired into us.

The ones who couldn't adapt died out. Those gene sets that always produced the same kind of people—stable people, good people—no matter the environment, no matter the violence—those gene sets that always played the same card, again and again—died out.

Leaving behind only the ones who could metamorphose.

We were not so different from these bugs.

Bell unloaded all this on Seana one day during lunch. They sat across from each other, sipping soft drinks. "The evolution of evolution?"

"Yeah," he said.

"Why would this happen in insects?" she asked.

"Because they've been here longest," he said. But it was more than that. He thought of the ants and their aphids. The enzyme that clipped their wings. He thought of the different ways that insects solved their problems. "Because insects always choose the biological solution."

Bell avoided Cole for days.

He told himself he was waiting for a good time to see the director, to tell her what had happened in the lemur tunnel. Told himself he wasn't afraid that Cole would retaliate by telling about drinking together on zoo time, zoo property. Both were lies, but what he had the toughest time with was pure simple fear of Cole.

"Ridiculous," he told himself. "You're a grown man and a professional."

On the other hand, Cole obviously *was* dangerous.

Maybe he could get Cole to leave, to resign his service contract without anyone having to tell the director anything.

This seemed, on reflection, to be the best bet for an outcome where he, Bell, kept his job and got rid of the problem.

The reflection took place at home, on the sofa, in front of the TV, in his underwear. When Lin crossed the room, he saw himself through her eyes. He looked like a bum. She was thinking, he knew, what an asshole he was for buying beer.

He didn't care.

Neither did she, it seemed.

She sat down on the couch beside him.

What was he? When had he turned into a person who said nothing, did nothing? What had he let himself turn into?

The next day, Bell followed Cole down to the supply shed and said "We're going to have a talk."

Cole took a set of eight-foot pruning shears down from the wall rack, and turned to face Bell.

"Yeah," he said.

Bell fumbled for a beginning, forgetting what he'd rehearsed.

Cole began whistling. He leaned on the pruning shears as if they were a wizard's staff. "I have to turn you in," Bell said.

"For what?"

"Throwing rocks at the animals."

Cole stared at him. His grip on the shears tightened. "I lose my temper sometimes. I have a temper, I admit."

"That's why you can't be here."

"Listen, I'll work on it. I'll be better."

Bell shook his head. "I'm just letting you know as a courtesy. I have to report it."

"You don't *have* to."

"The other choice is that you leave today and don't come back."

"That's not any choice at all."

"There are other places you can do your service."

"I like it here."

"Here doesn't like you anymore."

"You know what I don't like? I don't think I like you trying to push me around."

"Today is your last day here, one way or the other," Bell said. "You can leave on your own, or you can be ushered out."

"You really don't want to do that."

"You're right, I don't," Bell said.

Cole's face changed. "I'm warning you."

Bell raised his walkie-talkie, never taking his eyes off Cole. "Garland," he spoke into the handset. There was a squelch, then a voice, "Yeah."

"You better come to the supply shed."

"What's wrong?"

"Now, Garland." Cole shoved Bell into the wall. Shoved him so hard his teeth clacked.

And the rage was there again in the blowtorch eyes. Rage like nothing else mattered. Scarred hands curled into Bell's shirt.

"This is your last chance," Cole said.

Bell only smiled, feeling something shift inside him, feeling something change. He found suddenly that he was through being scared. "Fuck you," he said.

Bell ducked the first blow, but the second caught him upside the head, splitting his brow open. Bell spun away, throwing an elbow that missed, and then they were both off balance, taking wild swings, and Cole grabbed at him, and they were falling. They hit the ground and rolled, wrestling on the filthy floor. Cole came up on top, sitting on Bell's legs. "I fucking *warned* you," he hissed, and then he rained down punches until Garland tackled him.

After that, it was two on one, and Bell didn't feel the least bit guilty about that.

The zoo super interviewed Bell for her report. They sat in her office. Behind her, against the wall, her fish swam their little circles. The superintendent leaned forward and laced her hands together on her desk.

She didn't dig very deep. Seemed to think Cole's behavior was its own explanation. "I think you need stitches," she said.

Bell nodded. He touched his brow. His first zoo scar.

"He'll be barred from the zoo, of course," she said. "And I'll insist that his community service hours be revoked."

"What's going to happen to him now?"

"Charges probably."

"I don't want to press charges."

"Animal cruelty. The lemurs. He's going back to jail." She paused, then added, "When they find him."

Bell looked at the fish, swimming in the aquarium. "He said he's never going back."

That evening, as he was closing up, Bell found Cole's parting gift. Found it revealed, at first, in the presence of a door ajar.

The back room of the castle.

Bell stared at what had been done.

After the fight, Cole had climbed to his feet, wiped the blood from his face—and then walked off. Heading toward the gates. Even two on one, the fight had been about even, and when Cole had finally stepped back and walked away, Bell and Garland let him go. A draw. They'd assumed Cole left zoo property. But he hadn't left.

He'd circled back around to the castle.

And he'd poured lye into each and every terrarium.

Several grubs were on the cement floor, ground into pulp with a boot.

Others were desiccated husks. Only a few still moved, writhing in the white powder. Bell stepped further into the room, surveying the carnage. He should have known. He should have known this was coming.

Bell's inner alarm started bothering him on his way home that night.

Once a zookeeper developed an inner alarm, it worked everywhere.

In this case, it was less an alarm than a sense of something out of place. It got stronger as he closed in on the trailer park. At first he thought the alarm had something to do with Cole, but when he got home, he understood. The universe had an interesting sense of timing.

Lin was gone.

Not like gone to the store. Gone, left. Leaving him.

She left a note about it. The note explained. Blamed him.

Distantly, he heard himself curse.

All Bell could think, at first, was that she didn't seem to have taken anything. Like there was nothing about their life worth bothering with. She had written the whole thing off, it seemed. Him. Their life. A total loss.

He made some growling noises.

She might be back. She might change her mind.

The stereo, after all, was really hers. She'd had it before they moved in together, and they'd never been able to afford a new one.

Somberly, he unplugged the stereo. In something like a trance, he planted it in the sink and turned on the water. Like a zombie, he let the water run and started searching the trailer for enough change to buy beer.

The next month passed in a haze.

Word filtered down, as word always did, and it turned out Cole had skipped town. The cops were still looking.

Not many of the grubs had survived Cole's attack. The ones that did were scarred. Cole had been very thorough, even pouring lye in the terrarium on the floor. In all, only a handful of the grubs finished their cocoons. A few from the control cage. A few from the terrarium marked "heat." But they were twisted things, these cocoons. Damaged things. His experiment was ruined. His hope was that he'd be able to get at least a few reproducing adults, start over. If the cocoons hatched at all.

And word had filtered down, too, that it would be bad for Cole when he was caught, because the list of charges had grown, and the warrant had sprouted teeth. Cole was facing time, real time, for what had happened. Bell knew Cole would need someone to blame.

He would blame Bell, and he would blame the zoo.

Several weeks later, Bell pulled into the parking lot and found there were fire trucks already in the lot. Hoses ran upward along the hill. Black smoke curled into the sky. Bell ran. He knew what he'd see before he saw it. The castle was engulfed in

flame. The firefighters fought the blaze, but Bell knew it was too late. He imagined the animals inside baking. He imagined the sizzle and pop of burst skin, the soundless cries of dying snakes and lizards and frogs and bugs. He imagined his insects burning alive.

He looked around, searching for Cole, wondering if he'd stayed long enough to watch it burn.

When the fire was out, Bell walked through the ruins. The devastation was complete. Dead frogs and snakes and lizards. In the back room, he found the terrariums blackened and cracked. The insects inside charred and unrecognizable.

Except for one. The terrarium on the floor.

The terrarium with the *heat* sticker, now curled and blackened.

The cocoon was charred, split wide by the heat.

There was no grub inside.

They found Cole's body later that day in the weeds behind the parking lot. Bell watched them load the body into the ambulance. Dark and swollen. It had been a bad death.

There were burns, minor, across his hands, like he'd come too close to his creation. Burns and something else.

Something like stings.

Eyes swollen shut, anaphylactic shock.

Not everything burned in the fire.

Not all that burns is consumed. Cole had said that once.

Bell stood there for a long time, listening. Listening for a buzz like an electric light, but there was no sound. Only the sound of wind in the trees.

It was long gone, whatever it was. He just wished he could have seen what the grub had turned into. Next year it would be different.

Next year it would be a fruit eater, or a wasp, or a beetle. It would be what it needed to be.

It would be what the world made it.

Approaching home, Bell felt his inner alarm stir again.

The cable had been turned off again.

Those jerks didn't know who they were dealing with. Bell had gotten drunk two nights in a row now, and he was feeling mean, feeling predatory.

He stalked outside, nine trailers down to the cable box, opened it up with a hex wrench, and hooked his cable back up.

Went home and surfed channels for anything resembling porn.

After two hours of this, his thumb hurt and the battery on the remote died.

He heard the screen door open.

Lin?

In the moment before the inner door opened, it occurred to him that her stereo was still soaking in the kitchen sink. He had a momentary, fearful impulse; his leg jerked. Then the beer kicked back in. He slouched back. He sneered like a sleepy lion.

A shape in a doorway.

Seana.

His sneer disappeared.

She stepped inside and said nothing. Looked at him a moment, as if reading him. Slouched down beside him with a sack of takeout chicken.

His hand, heavy and lazy, rested on her leg.

She tugged his hand higher.

They didn't talk. Even the TV flashed in silence.

Outside the thin walls, the world licked itself and made hunting noises. ○

WHERE THE TIME GOES

Heather Lindsley

Heather Lindsley began writing short fiction in 2005. Since then, her stories have appeared in *F&SF*, *Strange Horizons*, and *Year's Best Science Fiction #12*. Her new tale is her first story for *Asimov's*. After growing up in Southern California and spending many years in Seattle, Heather is a little surprised to find herself living in London. She tends to lose track of time, and hopes that someday it will turn up in *Transport for London's Lost Property Office*.

"I'm gonna kill you." Chambers stalked up to Martin and dropped a crusty sock on his console. "Maybe a little death will keep you from leaving your stuff all over the ship."

"We have a salvage run today," Martin told her.

She flopped into the shabby seat next to him. "Tomorrow, then. I'll kill you tomorrow."

"Okey doke."

"So when are we launching?"

Martin pushed the sock aside. "15:05," he said, but his answer was drowned out by the sudden noisy declaration that girls just wanted to have fuuh-un.

"What the hell is that?"

"The new commtone," Martin said. "I pulled it from the music archives in honor of today's run. What do you think?"

"I think you should answer the comm and delete that tone," Chambers said, adding too late, "Wait, who is it?"

"It's Gnor."

Gnor's malignant, toad-like smile dominated the monitors in the cabin. "Chambers! Martin!" Gnor leaned forward, swirling pale yellow eddies in his atmosphere. "How are my two favorite scum-scraping subcontractors?"

"Blushing from all the flattery, Gnor," Chambers said.

"I thought you were just drinking on the job again."

"Bite me, you frog-faced fu—"

"What can we do for you?" Martin interrupted.

"Ah, getting down to business, then." Gnor blinked all six of his eyes in turn. "You owe me time."

"No way," Chambers said. "We paid three months in advance."

"That was four months ago. Now you're overdue for dock rental, power, atmosphere hookup, and nine Rail trips. Plus interest. You owe me five hundred hours."

"That's robbery and you know it," said Chambers. "Any other Railer park would charge half that."

"So take that scrap heap you call a ship somewhere else . . . after you pay up." He casually flicked his scaly tail at the screen. "And you might want to have a deposit ready for your new host."

"You know we don't have the time for that, you bloated bag of—"

"We'll get it," Martin said.

"You've got two days. I want five hundred hours by Friday, or I turn off the chlorine."

"We breathe oxygen," Martin said. Chambers stared at him in disbelief.

"Fine," Gnor said. "Five hundred hours by Friday, or I turn *on* the chlorine."

At 14:45 Martin disconnected the ship from its power and atmosphere chargers. Chambers maneuvered the ship away from the dock and joined a short queue of vessels that ran perpendicular to the Rail, a hundred miles of dull metal I-beam surrounded by a thousand miles of empty space. A speedy little green sport Railster cut her off and pulled into the line.

Chambers smacked the comm button. "Hey, that's our spot."

"It's Gnor's nephew," Martin said to her. "You know there's no point in scrapping with him."

A leering face appeared in the monitors. "It's our spot now, Snippers. We've got a party to crash." Another face pushed its way into the field and waggled various tongues, digits, and fundaments at them.

"Power up weapons," Chambers said.

"We don't have any weapons."

"Then give me something to throw."

Martin offered her the crusty sock. Chambers sighed, wadded it into a ball, and threw it at the laughing faces in the monitor. "I hate those guys."

"I know," Martin said, turning off the comm.

Martin checked over the salvage logs while Chambers plotted impractical revenge scenarios. She watched the little green ship take its place on the Rail, then accelerate and hurl itself off the end, only to vanish a few hundred miles out. Seconds later the ship reappeared, banged up and covered in obscene alien graffiti. Chambers hit the comm.

"Rough trip, boys?"

Gnor's nephew glared at her through a half dozen bruised eyes and stuck out his folded tongue. Chambers raised her hand and cheerfully offered her culture's equivalent before dropping the connection.

"Hee."

Martin shook his head. "You really should cut back on the *Schadenfreude*."

"But it's my favorite *Freude*."

Martin answered the trilling comm, and the Rail operator appeared in the monitor. "Alrighty, C & M Time Salvage, you're next. Where you headed?"

"Earth," Martin said. "36.754444 North, 119.774167 West."

"And when?"

"1983 107.75606796," Martin rattled off.

"Okay," the operator said. "That'd be a parking lot for an apartment complex in Fresno, California, 11:08:46 AM local time on April 17, 1983. Confirm?"

"Confirmed," Martin said.

"And your offset is still .28?"

"Yep."

"Okay, just give us a minute to set that up."

"Don't worry," Martin said. "We've got time."

The operator made a polite heh-heh noise, which in Chambers' opinion was more than Martin deserved.

"Do you have to make that joke *every trip?*"

"April 17, 1983.28," Martin announced. "The local time is eleven o'clock and change here in beautiful downtown Fresno. Or almost beautiful downtown Fresno," he added, looking out the window at a shapeless gray vista. "You ready?"

"Sure." Chambers slung a half-full canvas duffel bag over her shoulder and handed Martin a scuffed black leather briefcase. "Let's go collect our pittance."

"That's the spirit," Martin said. He adjusted the ship's door for the .28 offset so it opened on a sunny spring day in 1983.00. He looked out at a yellow Datsun parked right in front of the door.

"Oh, hell," Chambers said.

"Do you want to wait until they drive away?"

"No, let's just climb over. You see anybody out there?"

"Nope."

Chambers peered through the rear window of the car as she brushed off her overalls. "What baby on board? I don't see any baby on board."

"Maybe it's in the trunk." Martin used the ship's remote to close the door and render the ship invisible. "Remember when we parked," he said as they walked away from the ship.

"Again: joke, every trip, necessary?"

Martin pointed to the sign in front of the apartment complex's mass of ugly, boxy, two-story buildings. *The Versailles*, it claimed.

"Do you think they've ever actually been there?" he asked.

"First stop, Larry Platt, #108." Martin set a Pauser in front of the door just before 11:30. Chambers slid a slim robotic key into the lock, then pushed the door open for Martin.

They entered the apartment, taking the Pauser with them. A time-frozen Larry Platt was bathed in the glow of Donkey Kong. Chambers checked the handheld log for legal salvageable time. "There's a usable chunk up through 15:47:05 local."

"So range start, 11:24:37, range stop, 15:47:05," Martin said, entering the stop data into the Pauser. "Cued for one second increments, and . . . here we go."

All the moments in the range appeared simultaneously in the apartment. The man on the couch became a fleshy millipede that looped from the couch to the kitchen and back.

"Ten second increments," Martin said, making adjustments to the Pauser. "Twenty, thirty . . ."

Some of the Larry segments shrank until they formed thin, luminous strings. Others remained, a parade of clones connected by shining cords. On the television, the playing field was a mass of pink, blue, and orange, the digital scores layered in a perpetual 088888.

"One minute increments, two, three . . ."

Larry on the couch was a multi-armed god, simultaneously holding a joystick, reaching for chips, and picking his nose.

"Ten minute . . . twenty . . ." Now there were only a few Larrys, all connected by glowing threads of time.

Chambers opened the scuffed briefcase. She and Martin each put on a pair of heavy gloves and pulled shears from the duffel bag. They started clipping strings, dropping them one by one into the briefcase until they'd salvaged most of Larry's wasted time.

Martin calibrated the Pauser to read the range stop time only. "15:47:05," he said. Martin closed the briefcase; Chambers gathered the equipment. Back in the hall Martin released the Pauser and said, "So, who's next?"

"Here we are," Chambers said. "Apartment 310. Janine Costa."

Martin flicked the Pauser. "Start 22:16:53."

"What a dump," Chambers said as they entered the apartment. She stepped over a pile of dirty socks. "Are you sure we're not back on the ship?"

"Ha ha." Martin edged around a stack of pizza boxes, careful not to jostle them. He found a clear spot for the Pauser.

"How much time do we have?"

Martin checked the briefcase. "Looks like ten hours."

"So only four hundred ninety to go." Chambers glared at the small young woman on the couch and the crashing waves of her gelled hair. "We're gonna be in this stupid year forever."

Martin checked the log. "This one's not bad—looks like she's gonna be up wasting time until four o'clock in the morning."

"Ooh, six hours."

"If you're done whining I'm ready to collect some time here."

"Fine, let's do it."

"So range start, 22:16:53. Range stop 04—"

"What the hell are you doing in my apartment?" Janine said.

"Shit!" Martin jumped.

"What did you do?" Chambers said as she dashed to the equipment bag.

Janine backed up toward the wall, stumbling on a stack of neglected textbooks. "How did you get in here?"

"Nothing," Martin told Chambers. "It just went dead."

"Hit it again." Chambers dug around in the bag, pushing frantically through masses of wire tangled in the legs of collapsible tripods.

"It's not working," Martin said. "We need the backup Pauser!" He noticed Janine edging toward the door, and yelled "Hey, stop!" Janine threw a bottle of fluorescent orange nail polish at his head. "Ow, watch it!"

Chambers grabbed the first thing she found in the bag and held it like a gun.

"Freeze!" She pointed an odd-looking wrench at Janine.

Janine stopped and put her hands out in front of her.

Martin rubbed his head. "That wasn't very nice."

"What're you doing in my apartment?"

"Look, we're not gonna hurt you," Chambers said, flustered. "This is a simple salvage job. Just stay calm and we'll be out of your way soon."

"Salvage? What do you mean, salvage?"

"Time salvage," Martin said.

Janine stared at him. "You're nuts."

"Yep, he's nuts, I'm nuts, and we'll be out of here in just a minute. Why don't you have a seat while you're waiting?"

Janine walked slowly to the couch and sat down. "What's that stuff in the briefcase?"

"Time."

"Martin . . ."

"You're stealing my time?"

"Not stealing, recycling. You were wasting it."

"Less talk, Martin."

"How do you know what I do with my time?"

"It's a matter of public record," he said, looking down at the log. 22:03:29 to 22:14:12, paints toenails. 22:14:13 to—"

"This is your idea of less talk?"

"—22:20:07, stares into space. There's been a lot of this kind of thing since you dropped out of dental school. 22:20:08, encounters C & M Time Salvage." He looked up at Chambers. "Oh, crap. We're in her timeline."

Chambers went pale. "This is bad."

"Very bad."

"We're gonna have to fix this," Chambers said.

Martin didn't seem to hear her. "So very bad . . ."

Chambers snapped her fingers under Martin's nose. "Hey. Hey. We're problem solving now."

"Right, problem solving. What do we do?"

Janine piped up, nervous. "Look, I won't tell anyone you were here. Really."

"The Godfather," Chambers said.

"Isn't that a little drastic?" Martin said.

"He can get someone to clean up this mess. We've got to ask him for a favor."

"Don't kill me!"

"What?" Chambers and Martin both looked at Janine.

"Don't kill me, I won't tell anyone, I swear."

"Kill you?" Chambers said. "We're not gonna kill you. That would only make it worse."

Martin turned to Chambers. "What *are* we gonna do with her?"

"Well, we can't just leave her running around in an altered timeline, can we?"

"This is your, uh, time machine?" Janine asked.

"Yeah," Chambers said, brandishing the wrench. "What's your point?"

"Nothing, it's nice."

"Thanks. Have a seat." Chambers gestured to a ratty plaid couch equipped with seatbelts. Janine picked up the balled sock and held it tentatively until Chambers grabbed it from her and tossed it to the back of the ship. "Stay put," she said before joining Martin at the consoles. "Are we set?"

"Just about." Martin gave Chambers a small piece of bright pink paper. She put it in her mouth and Martin did the same with his own tab. He brought another piece over to Janine. "Here, put this on your tongue."

Janine crossed her arms. "Oh, no way. I am not dropping acid with you people. This situation is weird enough as it is."

"You know about zeta-aminobutyric acid?"

"See—already totally weird."

"So you don't know about it . . . and I probably shouldn't have mentioned it."

Chambers walked over to the couch. "Mentioned what?"

"ZABA."

"Oh, no, that's perfectly fine—of course you shouldn't have! Just give her the damn tab."

"She doesn't want to take it."

Chambers looked down at Janine. "Does she want her hypothalamus to explode?"

"Oh, come on—you don't have to scare her." Martin sat down on the couch next to Janine. "It doesn't explode. It just swells up a little. And then it shrivels. So you really ought to take the tab."

"Tell me what it does."

Chambers sighed. "Okay. Have you ever had jet lag?" Janine nodded. "Then you know how it messes with your body clock. Time travel is worse. It turns your body

clock into a smoking pile of gears and springs and really worrying boing sounds. And since your body clock also controls digestion and body temperature and hormones and a bunch of other things your time is still only guessing at—"

"So the chemicals in the tab protect the body clock?"

"Usually."

"Chambers."

"Always," she said. "Really. Take it and you'll be fine."

Janine took the tab from Martin. She gave it a dubious look before putting it on her tongue.

"It actually tastes pretty good."

"That's the glutamate," Martin said.

"Are you sure? It tastes more like fairy dust. And I think I'm detecting a hint of magic bean."

"Nope," Martin said, "just glutamate." He went to his seat at the ship's console and called back to Janine, "You might want to buckle up . . . this can be a little bumpy."

Chambers stood next to Janine in the ship's tiny bathroom, impatient but doing her best to sound otherwise. "Feeling better?"

"A little. Did we really just jump around in time?"

"If I say 'yes,' are you going to throw up again?"

"Probably not."

"Then yes."

"You know I'd really like to go home now."

"I know," Chambers said. "We're working on that."

Martin joined them, gesturing toward the front of the ship with a small wet/dry vac. "I think we're just about back to normal up there."

"Sorry about your couch," Janine said.

"Eh," Martin stowed the vac. "It's seen worse."

Chambers handed him the wrench. "Can you take care of the hookups? We should recharge and I want to start looking for the Godfather."

"Okay," he said, and turned to Janine. "You should probably come with me. A little walk will do you good."

Martin led the way to the back of the ship while Janine fished a large pack of bubble gum out of her pocket. She popped two pieces into her mouth and offered him the pack.

"Bananaberry Punch," he said. "And you think we ingest weird chemicals."

Janine grabbed her gum back. "They were out of Wacky Watermelon," she said, "and anyway it's better than Time Travel Barf."

"If you say so." Martin opened the dock panel and plugged in atmosphere and power, then tightened the fittings with the wrench.

"Hey," Janine said, "that's not a gun."

"Yes it is."

"No it isn't. It's a wrench."

"In the future all appliances are combined," he said as he programmed the atmosphere. "This is a wrench/gun/spatula." He closed the dock panel.

Janine snapped her gum. "Bullsh—" She stopped suddenly and wrinkled her nose. "Is it supposed to smell like matches in here?"

"Oh, not again," Chambers hollered from the main cabin.

"Sorry sorry sorry . . ." Martin called out to her.

"One of these days you'll kill us all," Chambers shouted.

Martin opened the dock panel and changed his atmosphere selection from SO₂ to O₂. "In my defense," he said to Janine, "the oxides are awfully close together."

"C & M Time Salvage, you're next. Where and when?"

"Earth," Martin said. "37.8501 North, 15.283—"

Gnor appeared in the monitor and pushed the operator out of the way at the same time Chambers pushed Janine out of comm view. She held her back with one hand and signaled unnecessarily for quiet—Janine was too busy staring at Gnor to make a peep.

"And when do you think you're going?"

"We have time to collect, Gnor," Chambers said. "Maybe you wouldn't mind letting that nice operator back into his chair so we can get going."

"Yeah, about that. I don't trust you deadbeat Snippers to come up with the time yourselves, so I've got an assignment for you."

"We don't need an assignment, we've got—"

"Those pathetic public domain logs? You get, what, maybe twelve consecutive hours, tops?"

"That's enough."

"Not when you owe me, it isn't."

"We're not collecting illegal time."

"This isn't illegal. The client's Russian. I've arranged for him to buy back his own wasted time. Minus 30 percent, of course. Twenty-five for me, five for you."

"Oh, no way," Chambers said.

"You got my five hundred hours?"

"No."

"Then you're going to Moscow. 1847. I'm sending you the details now. Collect all the waste until the client leaves town in 1849, then snap up to 1868 and deliver his cut. He'll be expecting you."

"Gnor—"

"You got any extra Splicers on board?"

"Yeah, a couple," Martin said.

"Good. He's gonna need one. And you're gonna have to show him how to use it."

"Sounds like a lot of trouble for 5 percent," Chambers said.

"Yeah, it does, doesn't it?" Gnor reached over the operator and hit the launch button. "Do svedanya, losers."

"February 5, 1847.28," Martin said. "3:40 PM. local time. Adjusting the offset to zero and . . . here we are."

He opened the door, revealing a swirling gray landscape.

"I thought you adjusted the offset," Chambers said.

"I did."

"Then what's with the gray void?"

Janine peered out. "Isn't that a courtyard?"

The muffled sound of a carriage on cobblestones drifted through the fog.

"Hello, Moscow," Martin said as they left the ship.

"Don't touch anything," Chambers warned Janine.

"Are you sure we shouldn't have left her in the ship?" Martin said as he set up the Pauser at the doorway.

"You want her touching stuff in there?"

"Good point."

Chambers entered the drawing room and found a frozen young man, clean-shaven and with short hair revealing nearly perpendicular ears.

Martin shook his head. "He's trying so hard to be dashing."

"And failing miserably," Chambers said.

Janine snapped her gum. "So who is this guy?"

"Leo Tolstoy," Martin said.

"The guy who wrote all those big fat books?"

"The guy who will write all those big fat books," Chambers said. "For the next few years all he'll do is gamble and screw. And he's only good at one of 'em."

Janine raised an eyebrow. "Should I ask?"

Chambers calibrated the line and pointed at the mass of tangled limbs in the bedroom.

"Wow," Janine said.

"September 22, 1868.28," Martin announced. "7:51 AM local time."

They stepped out into the courtyard and Martin tapped on the door. A man in a peasant shirt opened it, his dark beard not yet parted in the middle but beginning to show signs of gray.

"Growing his hair long enough to hide his ears was a good move," Janine said.

"Thank you. My wife suggested it," Tolstoy said in lightly accented English.

Janine blushed. "Uh, sorry, I didn't know you spoke English."

"I speak many languages." Tolstoy opened the door wider. "Please, come in. I've been expecting you."

They followed Tolstoy to his study and Chambers put the briefcase on his desk. She popped the case open. Tolstoy stood entranced over the bright mass of threads.

"That is my dissolute youth?" He only glanced up to catch Martin's nod, quickly returning his gaze to his luminous time.

"It's more beautiful than I remembered." He moved his hand toward the glow, then drew back. "Can I touch it?"

"Not without these." Martin took a pair of gloves and a small black box from the duffel bag and gave the gloves to Tolstoy. "And not just any gloves—these. Otherwise the time will dissipate." He held up the box. "This is a Splicer. When you want to use the time, put it in here. Close the box, press in the latch. Anyone within twenty feet will experience the extra time. When you pop the latch open, or when you run out of spare time, you'll be kicked back into your usual timeline at the point you left."

Martin demonstrated, then watched while Tolstoy did it himself.

"You've got it?"

"Yes, thank you."

Martin reached back into the bag and brought out a dull silver canister. "Keep the time sealed in here." He started moving time from the briefcase to the canister. When 70 percent of it was in the canister, he screwed on the lid and handed it to Tolstoy, who looked wistfully at the briefcase as Chambers closed it.

"Enjoy your time," she said, heading for the door.

Tolstoy nodded and shifted his attention to the canister.

"It's a shame," Martin said as he and Janine followed Chambers. "He'd do more with it than Gnor would. Gnor's just gonna sell it to Barbara Cartland."

"It's a shame we're only getting 5 percent," Chambers said, stopping short when she found a large, scarred, dark-suited man and two of his associates standing in front of their ship.

"You delivered Tolstoy's time?"

"Yes."

"Good. Lev should have his time. And you kept some for yourselves?"

Janine whispered to Martin, "That's not a wrench in his hand, is it?"

"No," he said, "that's not a wrench."

"The cut is for the bastard who sent us," Chambers said.

"Ah. You are flunkies."

Chambers sighed. "Flunkies, yes."

"Then I won't kill you." He held his hand out for the briefcase. Chambers gave it to him.

"Tell your bastard the Russians are ours," he said. His associates stepped aside and waited, hands on their weapons, until Chambers, Martin, and Janine were on the ship.

Chambers punched the comm button. Martin winced.

"You're back," Gnor said. "Where's my time?"

"With a gigantic scarred-up blaster-toting Russian."

"Orkhan's Tartar. Nice guy, if you don't piss him off. I'm surprised you didn't piss him off."

Chambers fumed. "You knew this guy had a lid on Moscow and you sent us there to collect anyway?"

"I didn't think he'd bother with the nineteenth century, what with all the salvage in the twentieth."

"You son of a—"

"You still owe me time."

"No, you owe us for the Splicer we left with Tolstoy."

"We'll call it interest on your debt. But I do feel bad about this little misunderstanding, so I'm gonna extend your credit for another Rail run. You can pick the destination, but you're leaving today. Don't come back without my hours."

"Here we are," Martin said. "June 24, 1892.00, 3:17 PM local time. Taormina, Sicily." He followed Chambers and Janine out of the ship and down a steep path that overlooked the ruins of an ancient amphitheatre. "When the Godfather said he was moving back to the Old Country, he really meant it."

The old man known as the Godfather Paradox settled himself in his leather desk chair with a sigh. The band was still playing a tarantella, the wedding guests still dancing and laughing outside. "Tom," he said, turning to his assistant, "is it just me, or does this day keep getting longer?"

"It's a long day, Godfather."

"Who's next?"

"A couple of low-level salvagers need a reset in 1983."

"And you're moving them to the front of the line because . . . ?"

"Janine Costa is with them."

"Ah. Send them in."

Chambers and Martin entered the dark-paneled room, Janine hesitating behind them.

"You have a problem," the Godfather said.

"Yes, sir," Chambers said.

"And so you come to me."

"Yes, sir."

"No one ever comes just to say 'Hi.'"

"Well, sir, we'd be happy to drop in—"

"Not you," the Godfather Paradox rumbled. "You annoy me. Salvagers who don't check their equipment annoy me."

Chambers' attempt at apology was silenced by the look in the Godfather's eyes. "Nevertheless," he said, "the timeline must be preserved. This I will do for you."

"Thank you, Godfather."

The old man peered at Janine. "Janine Costa," he said. "I know you. You're a clever girl."

"Her?" Chambers said, immediately regretting it.

"Don't be fooled by the legwarmers," the Godfather said. "And don't interrupt." He waved Janine forward, and she reluctantly stepped out from behind Chambers and Martin. "So," he said, "you didn't like dental school."

"How did you know—"

"You quit. You must not have liked it. An old man doesn't have to be a personified abstraction of chronological deviance to figure that out." The Godfather leaned back in his chair. "So, no teeth. That's fine. It takes someone special to spend all day every day looking at teeth. You're not that kind of special. So be it. The question before us, then, is: what kind of special are you?"

"I don't know . . ."

"A girl your age, so much life ahead of you . . . there must be something you want to do."

Janine was so nervous she couldn't even stammer.

The Godfather smiled, just a little. "Those science courses you've already taken don't have to add up to teeth, you know. There are more interesting body parts. Knees . . . lungs . . . brains . . ."

"I don't understand . . ."

He waved his hand dismissively. "Eh, you'll have time to figure it out."

The Godfather turned his attention to Martin and Chambers. "Go back to the day. Ten minutes before you made your mess. Take this girl home and everything will be as it should be."

"Thank you, Godfather," Chambers said.

"Someday, I'll call upon you to do a service for me. That day may never come, but it will probably be May 15, 2367. Or possibly October 3, 1491. We'll be in touch."

"Yes, Godfather," Chambers said.

"Thank you, Godfather," Martin said.

"Go," the Godfather said. "And remember to check your equipment."

"What was all that stuff about teeth?" Chambers whispered to Martin as one of the Godfather's attendants led them off the estate, past the long line of people waiting to ask favors of the Godfather. Janine walked ahead in a daze. "Do you think being a paradox has finally melted his brain?"

"He wasn't talking about teeth. He was talking about destiny," Martin said.

"It sounded like teeth."

"You weren't paying attention."

"I was too intimidated to pay attention."

"Let's hope Janine wasn't."

The attendant left them outside the last gate.

"People are spending a lot of time waiting in line," Janine said. "Why doesn't anyone salvage it?"

"Nobody'd be crazy enough to take time from the Godfather," Martin said.

"But you wouldn't be taking it from him."

"We were searched every time we went through a gate," Chambers told her. "We couldn't get a Pauser inside."

Janine pointed to a queue that extended well beyond the last gate. "Looks like you wouldn't have to."

Martin turned to Chambers. "It's a terrible idea," he said.

"Yeah," she said.

"I mean, really, just . . . terrible."

"Dangerous."

"Foolhardy."

"Crazy."

"Yes, crazy," Martin said. "Completely crazy."

"Absolutely," Chambers said. "Let's get the equipment."

Back on the ship Chambers gazed into a briefcase even scruffier than the one they lost in Russia. She'd never seen so many glowing threads of time packed so tightly in one place. "There's gotta be at least a hundred thousand hours in here."

"All that time . . ." Martin said. "Years and years . . ."

"It's beautiful," Janine said, her face lit with time. "I mean, I knew it was beautiful, I saw Tolstoy's, but so much of it, all together like this. It's beautiful."

Chambers snapped the case shut. "All right, next stop April 17, 1983."

"We've got about twenty minutes to kill before the launch slot," Martin said as he handed out ZABA tabs from a box on the console. "I might as well go hook us up to some fresh air and a little juice."

"I, uh, need to go to the bathroom," Janine said when Martin reappeared. She headed toward the back of the ship.

"Do you want a burrito?" Martin asked Chambers. "I'm going to zap a frozen burrito."

"I thought those things were expired."

Martin checked the date. "Not until next week."

"Which means that counting salvage runs they've been around at least a year longer."

"Eight months, tops."

"Fine, it's your gastrointestinal system."

Martin sat down on the couch with his steaming burrito. "Hey, how many frozen burritos do you think we could buy with all that time?"

"We're not using that time to buy frozen burritos."

"I know, but as a thought experiment—"

"It's not a thought experiment. It's just math."

"So how many?"

Chambers sighed. "Seven hundred thirty-three thousand eight hundred twenty-four."

"That's a lot of burritos."

"Yes. Yes, it is."

"We good to go?" Chambers asked Martin when he returned from releasing the atmosphere hookups.

"Let 'er rip."

Chambers piloted the ship to the Rail queue. Martin sat down next to her. "Janine's been in the bathroom a long time," he said.

"Must have had one of those burritos."

"Stop mocking the burritos." He rattled off their destination coordinates to the Rail operator. "Now that," Martin said, glancing over at her, "is the smile of a woman who just salvaged her way to freedom."

"You look pretty happy yourself," Chambers giggled.

"You giggled," Martin said, then confirmed their standard offset.

"I'm happy. This is my 'time beyond my wildest dreams' giggle." She maneuvered the ship to the Rail.

"Funny," Martin said. "It sounds just like your nitrous oxide giggle."

"I have a nitrous oxide giggle?"

"In all the years we've been working together the only time I've ever heard you giggle was when I accidentally hooked nitrous into the atmosphere." He gave the Rail

operator the go-ahead to launch the ship. "I remember, because you usually yell about that kind of mistake. Face it, you are not a natural giggler."

"No," Chambers said. "I'm not."

Martin adjusted the offset. "Here we are. April 17, 1983.00, 22:06:53." He swiveled the chair around. "You know, I'm feeling a little dizzy . . ."

Chambers stood up, then fell back in her chair. "Janine," she said.

"She's not here," Martin said after he and Chambers let themselves into Janine's apartment.

"Of course not."

"She took the textbooks."

"And left the pizza boxes." Chambers held up the top one. Janine had written "SORRY" and "THANKS" on it in large letters.

"We could go back—"

"Are you kidding?" Chambers said. "And mess with the timeline again? The Godfather would not be happy."

"Or forward. She's got to be in the logs somewhere."

Chambers sat down on Janine's couch and sighed. "There's no point. You were right. The Godfather was talking about destiny. He knew this would happen. This is 'everything as it should be.'"

Martin sat next to Chambers. "It was Janine's idea, salvaging from the line."

"And she did leave us half."

"Half of a hell of a lot is still a lot."

Chambers smiled over her post-nitrous headache. "Three hundred sixty-six thousand nine hundred twelve burritos," she said.

The Chair of Chronobiology at the University of California, Berkeley, pushed her gray hair out of her eyes and spoke to the single thread of time looped around itself at the bottom of a dull silver canister.

"I didn't waste you," she said. She put the lid on the canister, and the canister in a desk drawer that also contained a pair of gloves, a small black box, three tiny pieces of faded pink paper, a Nobel prize medal, and a pack of watermelon flavored bubble gum. She took out the gum—a guilty pleasure that made her feel young again—then closed the drawer and locked it.

Physics had gotten weirder in her lifetime, but not weird enough for practical time travel. No alien species had introduced themselves to humanity, and Janine never caught anyone else recycling time. Her life, in the end, was surprisingly mundane.

Still, she'd used her time well. Her research led to new treatments for jet lag and more serious circadian rhythm disorders at the root of a dozen mental and physical illnesses. Her colleagues in chronobiology discovered more applications every year.

She leaned back in her chair, put her feet up on her desk, and snapped her gum.

Physics would catch up, and physiology would be ready. ○

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WIFE-STEALING TIME

R. Garcia y Robertson

Rod Garcia tells us that his twenty-year-old daughter Erin has just returned from spending four months in Panama studying tropical birds and cathching poison arrow frogs with her bare hands. His own life is not so adventurous. He is completing a historical fiction novel about Mary Magdalene's Daughter, currently titled *Magdalene's Daughter*, which combines the gospels with Roman and Jewish historians. He's also working on a new series of science fiction stories set in modern America.

PRETTY BOTTOM

SinBad sat in the lee of his stalled sand sail, feeding a thornbrush fire, listening as ba'aths called to each other over the dark sward. They had smelled his fire on the night wind, a whole hunting pride from the well spaced cries, out looking for a late snack.

Too bad. Tonight's wind was dead against him. He had a cargo for Kaol, a couple of hundred haads to the east, a legal cargo even, offworld nanoelectronics, but a fitful easterly breeze kept him from making any headway.

Ba'ath calls got louder, closer. Reaching over his shoulder, into the sand sail's cargo bay, SinBad unshipped his repeating crossbow, cranking back the bow. Claw marks on the tough skeel-wood stock were unpleasant reminders of his last close encounter with a ba'ath. He slid in a clip of six explosive bolts, hearing the satisfying click.

SinBad had nothing against ba'aths. Even hungry ones. *Leo barsoom*, the big black-maned Barsoomian lion, was a dozen sofads long, a bio-engineered carnivore twice the size of Numa on Old Earth, ending in twin sets of sabertooth canines. Megafauna require mega-predators.

Aiming to be at best a mini-meal, SinBad settled in between the sand sail's tricycle tires, his cocked crossbow pointed at the night. Half a haad behind him glowed the fires of a nomad camp. Red men. Crows, from their tall hourglass shaped tipis. Being a Huron outcast, SinBad had not hurried to introduce himself. Now it was too late. Thuria was up, and the Slaver Moon made the usually friendly Crow wary of strangers.

As the fire sank down to embers, SinBad pulled his sleeping furs tighter, then flicked his sand goggles to night vision, peering into the infrared, seeing by Thuria light. Slavers had made Barsoom's inner moon highly reflective, so they could scan the planet's surface more closely at night.

Nothing moved. Aside from some ghostly acacia trees, swaying in the wind.

Ba'ath calls slackened, replaced by mounting boredom, while the strange stars of Carthoris system wheeled overhead. Thuria set, and the Crow camp stirred behind him. Fear alone kept SinBad from drifting off.

Then he saw a silver form slither out from beneath a wait-a-bit thorn tree, barely thirty sofads away. Too small to be a full-grown ba'ath, the lithe shape stayed low to the ground, creeping toward him. Juvenile ba'ath? Dire wolf? Jackal? At full charge a ba'ath covered thirty sofads faster than you can say it—if this was a ba'ath.

He shifted his crossbow to cover the approaching shape with the cold sight. Dark metal formed a sharp black V, blotting out the infrared glow. His finger found the curved trigger.

Even in the dark, he was a decent shot at this range. Explosive bolts made any hit hurt. By holding down the trigger, while working the cocking lever, he could empty his clip in a quarter xat.

Whatever was coming froze, as if it could feel his intent through the darkness.

Predators and prey had a psychic relationship. At a sward waterhole south of Ptarth, he once saw steppe gazelle grazing beside some sleeping ba'aths. Suddenly, the grazers bolted, disappearing into dawn fog. Presently the ba'aths perked up, starting to yawn, stretch, and sniff the wind. The gazelles had sensed the carnivore's hunger, before the ba'aths themselves.

Without warning, the shape in the dark hissed at him, "Sush. Outcast. Do not shoot."

Hastily, he lowered his bow. It was a woman's voice, a young woman. Pretty, too, from the sound of her. Sex offenders also had psychic links to their prey. "Who are you?"

"Pretty Bottom," the woman replied, confirming his instincts. Lest he get any ideas, she added, "Third wife to Alligator Stands Up."

SinBad had heard of him, an aging Crow war chief, with a famously young harem. "Kaor, Pretty Bottom."

Standing up, a buxom black-braided teenager in beaded buckskins strolled into the firelight. SinBad could not see her bottom, but the rest of her was enticing, from her dark smiling eyes, to the bone-handled skinning knife tucked into her calf-length boot. Old Alligator Stands Up had notoriously sweet taste in wives. "Kaor, outcast."

SinBad set aside his crossbow, still cocked. "How do you know I am an outcast?"

"Why else would you be sitting alone in the dark?" Pretty Bottom wrinkled her pert nose. "I can smell it on you, along with the fear. Sex offenses, right?"

He nodded. Too true.

"Is that why you are shaking?"

"I nearly shot you." That still had him rattled. "What are you doing, sneaking about at night?"

She laughed. "Silly, it is Wife Stealing Time."

"Already?" He would be late getting to Kaol.

Setting her namesake down by the fire, Pretty Bottom asked, "Isn't that why you are here?"

Hardly. "I was headed for Kaol, when the wind failed." Right at Wife Stealing Time, half a haad from a Crow camp. Why did these things always happen to him? His parole specified that he could not come within a thousand sofads of a commercial sex operation, fertility festival, or communal orgy. Technically, Wife Stealing Time was none of these, but try telling that to a judge. Especially a married one.

Ba'aths called in the blackness. SinBad reached for his crossbow, but a slim hand stopped him. Her brown fingers felt firm and exciting.

"Just ba'aths." Pretty Bottom seemed totally unconcerned by a pride of saber-toothed killers. "Afraid they want to eat you?"

"Maybe." Not him personally perhaps, but they were out flesh shopping. His visitor smirked. "They are not that hungry."

"Let's hope so." He kept the cocked crossbow within reach.

"Here, this will help." Pretty Bottom got up, dusted off her buckskinned butt, then wiggled into his sleeping furs, totally taking his mind off the prowling ba'aths. Pretty Bottom was barely into her teens, Barsoom years, twice as long as those on Old Earth. Ten years younger than him. But that did not stop her. She whispered, "You are scared. I am cold. This will please us both."

"I'm not that scared," he protested, unlacing her buckskins.

Pretty Bottom slyly stroked his crotch. "See, it's working already."

It was. How weird that young women like her had such power over men, especially men like him. He had been running late on a trip to Kaol, risking his on-time bonus, beset by starved ba'aths, afraid for his life. Suddenly none of that mattered. Not a bit. He reminded Pretty Bottom, "I am twice your age."

"And half my husband's." Pretty Bottom was aching to feel younger flesh. His even, absurd as that seemed. Who was he to complain?

Pushing up Pretty Bottom's buckskins, SinBad saw she deserved her name. No rawhide nomad underwear, just bare enticing flesh.

"So tell me about your sex crimes," she suggested, sliding her hand inside his loincloth.

He shrugged. "Unnatural copulation, aiding in adultery, cohabiting with lesbians, that sort of thing."

Pretty Bottom sniffed. "I hoped for something spicy."

"You can learn a lot from lesbians," SinBad protested.

"Or from living in a crowded tipi." She snuggled closer. "You are already aiding in adultery."

"I am?"

"It is Wife Stealing Time. Anyone who hides me is committing that crime."

Wife Stealing time was two weeks in the spring when Crow romeos were free to kidnap wives they had seduced during the year. Then their own wives and girlfriends would dress the victims up, so their paramours could parade them around camp, showing off their success with other men's wives. Unmarried women and faithful wives were immune. Husbands could do nothing to interfere. Guilty wives had to flee the village, bedding down with the ba'aths and jackals. There was no embarrassment in being eaten. "Alligator Stands Up is smoking in his lodge. He will lose his standing if he comes after me."

"How many wives does old Alligator have?" SinBad asked.

"Eight." Enough Panthans to play Jetan. "Half of them are hiding out. Leaving just old wives, and young favorites to pound his meat and flatten his sleeping furs."

Since poor neglected Pretty Bottom had already done the crime, and made him her accomplice, SinBad saw no sense being shy. Slipping off his loincloth, he prepared to put her most famous asset to use. But his partner in crime preferred natural copulation. "Don't worry," she whispered. "I am pregnant."

Nature's best birth control, already knocked up. He ran a hand over the smooth curve of her belly, which was just starting to swell. "Did Old Alligator stand up?"

"Not for me," she sighed. "My baby is from the scout, Goes Ahead."

Who got in ahead of her husband. Old Alligator's loss. Pretty Bottom was full of youthful, guilt-free enthusiasm, which was plainly going to waste. SinBad had never had so much fun breaking parole.

Afterward they slept, wrapped in his sleeping furs. Near to dawn, she nudged him. "Listen?"

He heard nothing. "What?"

"Do you hear the ba'aths?"

"No." He had totally forgotten about the toothy cats.

"They have made their kill." Pretty Bottom kicked off the furs, pulling on her beaded boots. Then she stood up, drawing her skinning knife, looking incredibly fetching in just the calf-length boots.

He hated to see her leave. "Where are you going?"

"To get breakfast."

"By driving ba'aths from their kill?"

"No," she replied coyly, "by convincing them to share."

He grabbed his crossbow, starting to get up. "Let me come with you."

She shook her head. "They would not like that."

"Probably not," he admitted.

"Then get the fire going again, and leave the ba'aths to me." With that she walked off into the chill of first light, without looking back. He hoped she returned in one pretty piece. On less than a day's acquaintance, SinBad could already tell what Alligator Stands Up saw in her. Goes Ahead, too.

Blood-red day broke over the slowly terraforming landscape, sand and sward, dotted with acacias, and wait-a-bit thorn trees. SinBad relit his fire, listening for ba'ath calls, but hearing only birdsong. Dawn wind blew in the wrong direction. He was worried and hungry, and Thuria would be up soon, adding to his troubles. If Pretty Bottom survived her breakfast with ba'aths, he would have to hide her from the Slaver Moon.

Before he could fret himself completely into a stupor, Pretty Bottom sauntered back into camp, carrying a fresh hunk of moropus haunch, saying, "This is all they would part with."

He took the bloody meat, handing her a washcloth. "I feared for you."

"Needlessly," she noted, wiping moropus blood off her body.

SinBad cooked the meat on thorn bush skewers, while Pretty Bottom wriggled back into her fringed buckskins. When the meat was done, he told her, "Thuria is rising. We need to find a safe place to eat."

Pretty Bottom agreed, "First I must get my possible sack. I left it in a tree."

Burying his precious cargo, he made a place for Pretty Bottom on the back of his sand sail. She returned with her beaded possible sack, the Red woman's leather purse. Settling in behind him, she asked, "What do they call you?"

"SinBad."

She grinned at him. "That's a lie. You sin very well."

Unfurling the sail, he headed off downwind, looking for a hiding place. Not easy to find on the flat mossy sward that covered most of Barsoom. But he had to do it soon, ahead of the Slaver Moon. Pretty Bottom faced kidnapping and worse, while Slavers would kill him out of hand.

Finally, he found a spot, a stretch of grassy steppe, cut by a dry wadi, with a high bank on the Thuria side. There was no way to hide the sand sail, so SinBad parked it at the head of the wadi, telling Pretty Bottom, "I'll carry you from here."

"Really?" She looked shocked. Nomad women regularly carried men's things, but were never carried about by men.

"We cannot leave a line of women's bootprints for Slavers to follow."

She agreed with a giggle, more embarrassed by being picked up than by serial adultery. Barsoom's light gravity made it easy, but by the time they reached the wadi, Thuria was breaking the horizon. Slaver macrosopes were already sweeping the landscape for victims, able to see anything, even the eye color of any woman silly enough to gaze at Barsoom's nearer moon.

Sure enough. Huddled against the high bank, he heard the boom of an orbital

shuttle breaking atmosphere, followed by the whoosh of the ship settling down next to his abandoned sand sail. But there was no woman, no cargo, nothing to tempt the Slavers to follow his heat trail into the wadi. Instead they took off again. Slavers knew it was Wife Stealing Time, and had their hands full, combing the area around the Crow camp for errant wives in hiding.

SinBad settled back, chewing on roast moropus. Pretty Bottom asked, "Are they gone?"

"Hope so." He was not about to look. Macroscopes would be trained on the wadi bank, searching for human prey. Thanks to the Greenies, offworld weapons were banned on Barsoom, forcing the natives to make do with bows and swords. Slavers had line-of-sight lasers and orbit-to-surface missiles. They could pick you off without ever leaving Thuria.

Sighing, Pretty Bottom relaxed against him. "You have been nice to me."

"You too." More than nice.

"It is not easy, being third wife to Alligator Stands Up."

"Or Goes Ahead's girlfriend," he reminded her.

"Even worse." She grimaced. "Goes Ahead just wants to parade me through camp, to embarrass my chieftain, and bolster his pride."

Everyone had plans for her, including him. Though his would have to wait until Thuria set. Making love in a wadi was not very practical, especially with Slavers watching.

Instead they waited, while Thuria hurtled overhead. SinBad noticed several pugmarks in the sandy wadi, one quite large. He pointed them out to the young nomad. "Ba'ath?"

"Two ba'aths," she replied. "Mother and cub."

"You can tell that from these tracks?"

"Yes." Pretty Bottom read the spoor as if it were a sensor readout. "The mother was teaching the cub to hunt. She trapped a young gazelle against the bank of the wadi, where they played with it for awhile. Then they killed it, and went off that way, carrying the dead gazelle."

Looking closer, SinBad saw the smaller prints among the pugmarks, jumbled and frantic, as the terrified gazelle bounded about before being killed and eaten. Like the moropus they had for breakfast.

Thuria set. By now the east wind had fallen, leaving him totally becalmed. Too bad. He would not start for Kaol today. Luckily, he had someone to occupy his time. Loosening his loincloth, he ran a hand up under her fringed buckskins.

Pretty Bottom arched a dark eyebrow. "What? You want more?"

"Oh, yes." Who would not?

She feigned surprise. "Last night you were so wary."

"You are even more beautiful by day."

"I am?" Pretty Bottom purred.

"You know you are." SinBad never lied to women, especially one so handy with a skinning knife.

Pleased to have found a man who appreciated the obvious, Pretty Bottom let him lift her buckskins. This was Wife Stealing Time. Next week, it would be back to neglect and adultery.

Before he even got started there was the boom of a shuttle breaking atmosphere. SinBad froze in mid-ravish, looking up at a silver streak falling out of the cloudless sky. This was an old Slaver trick, to leave a ship trailing in orbit, to see who broke cover when Thuria went down. And he had fallen for it.

"What was that?" his paramour asked.

"Nothing nice." Rolling off her, he pushed Pretty Bottom back up against the bank.

Too little, too late. He heard the whoosh of a lander settling in the long grass. What now?

Pretty Bottom whispered, "Slavers?"

"Probably." Certainly not Goes Ahead, looking for a lost girlfriend to decorate. He cocked his crossbow, for all that would do against lasers and sleep gas grenades. Pretty Bottom drew her skinning knife. They waited.

Nothing happened, at first. He sat there, clinging to his crossbow, mentally counting tals. If they were coming for him, it would be quick. Slavers did not like to linger, once Thuria had set.

Expecting Slavers, he was shocked to have an angel flutter into view; a silver-wigged beauty, wearing glitter paint, white solar-powered wings, and a shining jeweled G-string. Silver-plated nipples shone in the sun.

Neither he nor Pretty Bottom knew what to say. Landing in an ivory flutter of artificial flight feathers, the silver-skinned woman said, "Kaor. We come in peace."

Tourist. And unarmed. That much was obvious. "Kaor," SinBad replied, setting aside his crossbow. He had to stop pointing it at pretty women. "We were going to come in peace. Then you arrived."

"I did not mean to interrupt," the silver woman protested. "Please continue your copulation. I hear it is spring on this planet. What you locals call Wife Stealing Time."

Only if you are Crow. "Is that why you came here?"

"Oh no." The offworlder shook her head. "We are here to hunt."

"What?" asked Pretty Bottom suspiciously, still holding her knife.

"Ba'aths."

SinBad grimaced. "This is the place."

"These are Crow hunting grounds," Pretty Bottom pointed out. "You need to pay my people."

"Oh, I am not hunting." Silver-lashed eyes rolled. "My husband is."

"Then he must pay."

"Well, I am sure he will," the offworlder promised.

"Now." Pretty Bottom stood up, brushing off her buckskins, looking about. "Where is he?"

SinBad broke cover as well, looking up over the bank, seeing a squat, shining orbital yacht, surrounded by a flickering energy fence. Their offworld guest seemed suddenly sorry to disturb their tryst. Spying on the locals was not so fun when natives started making demands.

"Let us go." Pretty Bottom still held the skinning knife. "I am Pretty Bottom. My husband is Alligator Stands Up, war chieftain of the Kick Belly Crow."

Silver-wig turned to SinBad. "Is that you?"

Pretty Bottom laughed at the notion. "He is a Huron outcast, a sex criminal."

"Oh."

"It is Wife Stealing Time."

"So he stole you?" Silver-wig meant him.

Pretty Bottom snorted. "No one stole me."

"And that is good?" Silver-wig did not want to make another silly mistake.

"Of course." There seemed to be no end to offworld foolishness. "Would you want to be stolen?"

"No," Silver-wig admitted.

"Then beware," SinBad warned. "Thuria rise is only a zode away."

"Thuria?"

"Slavers," he explained.

"Oh. We have missiles," she replied brightly.

Both Red Barsoomians rolled their eyes. Pretty Bottom tucked the knife back in her boot, and went wading through the long grass toward the yacht, stopping at the sand sail to pick up her possible sack. SinBad followed, eyeing the grass tops, his crossbow out and cocked. This was ba'ath country, where your only sure warning was a twitch in the tall grass.

Silver-wig took off behind them, landing alongside the energy fence.

Even when he got to the fence, SinBad instinctively kept his back to the offworld camp, watching the grass. Ba'aths knew us, better than we knew them. Where we were, where we had been, where we slept, and where we relaxed. He would sooner turn his back on trigger-happy tourists, armed with lasers and Issus missiles.

Inviting them in, Silver-wig opened a fence section, but SinBad did not turn about until it resealed behind them. He found himself facing a typical Tourist hunting party preparing to go out, topping off canteens with home-brewed gin, and sighting in their lasers on distant objects. White apes squatted patiently, waiting to shoulder their loads. Their leaders were an expensive-looking gent in tiger-stripe body paint, with a heavy duty laser rifle, and his SuperCat guide.

This SuperCat, *Homo smilodon*, was a cross between humans and big cats, walking erect, with tawny fur, clawed hands, a stubby tail, tufted ears, bulging forehead, and saber-toothed canines—not as big as a ba'ath's, but sufficiently scary. SinBad knew he was a local, since the SuperCat carried just a short stabbing spear.

Sliver-wig introduced them, saying, "This is Pretty Bottom, and her friend Huron. Meet my husband, Laird Islay of Islay."

Laird Islay had to come from Paradise system at least, since no one closer than that would take light years out of their lives to stalk exotic predators. He stuck out a huge tiger-striped hand, saying, "Thanks for returning my wife. I hear they are in season."

"Only for Crows," SinBad corrected him. "I am Huron."

"Outcast Huron," Pretty Bottom added.

Islay winked at him, "Well, Huron, looks like you caught one anyway."

Silver-wig giggled, "They were just going to mate, when I flew by."

"Try not to hold it against us." Islay of Islay slapped his wife's silver rump. She smiled, lowering long gleaming lashes.

Her laird introduced the silent SuperCat, "This is Simba. We came to kill a few ba'aths, keep some of you from being eaten."

Unimpressed, Pretty Bottom told them, "I am Crow. Pretty Bottom, wife to Alligator Stands Up, war chieftain of the Kick Bellys. You may not hunt without my permission."

Islay must have offworld permits. Greenies did not care how many ba'aths humans killed. But his lairdship was sharp enough not to anger the locals, especially pretty promiscuous ones. "What can I give to get permission?"

"You may start by feeding us," she suggested primly.

Snapping striped fingers, Islay of Islay ordered up a vegan feast of fresh fruit, roast tofu, curried rice and vegetables in peanut sauce, raisins, almond butter, apples, celery, and black bean burgers. Washed down with fruit juice. Pretty Bottom stared at a black bean burger, asking, "Where's the meat?"

"Killing to eat is wrong," Laird Islay informed her, while almond buttering a celery stalk.

Pretty Bottom shrugged, pulling out a strip of roast moropus to spice up her burger. Her hosts were aghast. The Crow thought they were crazy. "You came here to hunt."

"Ba'aths. They are carnivores. Killing them saves countless sentient beings," Silver-wig explained.

"You are not going to eat them?" Pretty Bottom looked scandalized. "Not even the heart?"

Tourists looked down at their tofu, saying nothing.

"Do you have a see-through sack?" Pretty Bottom asked. Given a seal-a-meal, she filled it with raisins and apples. "How about some silver cloth?"

They produced that too. "And a See-Me-Too."

"She means a mirror," SinBad explained, filling his canteen with fruit juice. He was Huron, so no one needed his permission to do anything. Not in Crow country.

Silver-wig produced a self-illuminating digital looking glass. Admiring her 3V reflection, Pretty Bottom told them, "Kill all the ba'aths you can."

Sliver-wig saw them back through the energy fence, asking the Crow, "How did you get your name?"

"Pretty Bottom is a famous name in my family," the Crow explained, shouldering her possible sack, now stuffed with loot. "My great-great-grandmother lured a Lakota war party into an ambush, and was given the name, 'Bares her Pretty Bottom to the Enemy.' Before that she was called Weasel."

Made sense. SinBad asked her, "What was your baby name?"

"Beast."

He believed it. Silver-wig felt sorry that lunch was less than a success, but Pretty Bottom spurned her apology, holding up the seal-a-meal. "These raisins are delightful. I can always get meat."

All the vegan huntress could say was, "Good luck."

As they waded back to the dry wadi, with SinBad's crossbow cocked and aimed at the grass tops, Pretty Bottom told him, "I like her."

"Who? Islay's wife? Me too," SinBad admitted, picturing pert silver nipples.

"I like her silver hair." His Crow companion could be equally superficial.

"It's a wig," SinBad warned her, before she got too carried away.

"Really?" Pretty Bottom seemed even more intrigued.

When they got back to the wadi, SinBad was ready to resume what the offworlders interrupted, but Pretty Bottom would not have it, handing him the possible sack. "I have business in the brush."

Without saying what it was, she strode off into the long grass. He called after her, "Be back before Thuria rise."

She did not answer. Any woman who had breakfast with ba'aths was impossible to sway. He sat down by his sand sail, eating raisins, and keeping watch on the Tourist camp, hoping to catch sight of Silver-wig.

Sure enough, after a dozen xats, the energy fence opened, and Laird Islay of Islay strode out, his SuperCat guide at his side, followed by two more tiger-striped tourists, then a trio of White ape gunbearers. Silver-wig soared ahead, surveying the grass from buzzard height. Bon appetit, ba'aths.

When he could no longer see Silver-wig, SinBad sank back down to wait. Wind had shifted around to the southwest, fair for Kaol, but he was not going anywhere.

Thuria rise drew near, and Pretty Bottom came strolling up the wadi, asking, "Any raisins left?"

"Of course." Time, though, was running low.

Grabbing a handful of raisins, she told him, "They're back."

He turned to see the hunters returning empty handed. Just as well. Silver-wig did a wingover, turning their way to land in the wadi, saying, "We did not see any ba'aths."

"Good." Pretty Bottom downed a handful of raisins.

Silver-wig looked hurt. "If you do not want us hunting, why did you give permission?"

"For raisins, shining cloth, apples, and a See-Me-Too." Offworlders often missed the obvious. Giving them the right to hunt did not preclude rooting for the ba'aths.

"Have an apple," SinBad suggested, to make Silver-wig more welcome. Rudeness to semi-nude women was against his religion.

Shaking her head, she spread her white primaries, saying, "That Slaver Moon will be up soon."

Thuria rise was a couple of xats away. Which meant back to hiding behind the bank. Silver-wig took off, and SinBad asked his Crow companion, "I thought you liked her?"

"I like her wig."

That too. He watched the offworlder wing her way over the grass, landing at the edge of the energy fence. As the fence opened, a tawny blur with a wild black halo burst out of the tall grass, landing on Silver-wig's back, seizing her in great fanged jaws. Thuria topped the horizon. Silver-wig shrieked, then vanished into the long grass, carried away by a ba'ath.

HUNTING PARTY

Seizing his crossbow, SinBad shouted over his shoulder to Pretty Bottom, "Hide."

Unable to see any sign of Silver-wig, he could still hear her screams. That was good. Screams and shrieks meant she was alive. Cocking the bow, he dashed back into the tall grass, hoping it was just one ba'ath, not a whole pride. At any moment, another ba'ath might leap out of the shag lawn to make a midday meal of him. *Leo barsoom* was like that, waste not want not.

When he got to the gap in the energy fence, the screams had stopped. Bad sign. He looked about, finding Pretty Bottom right behind him. "I told you to hide."

"Thuria is up." Pretty Bottom nodded at the horizon. Slavers had already seen her, so hiding was worse than useless. Now he had two women to worry about, one seized by a ba'ath, the other menaced by Slavers.

"Stick close." Slavers had to wait, since a ba'ath would not. If he did not find Silver-wig in a xat or two, he never would.

There was a trail in the grass, strewn with solar cells and silver feathers. He bounded down it, to get to the ba'ath while it still had its jaws full. Hopefully, an explosive bolt up the butt would make it open up.

After a dozen ads, he came on a huge dent in the grass that looked like a kill site. Silver feathers lay all about. Laird Islay and his SuperCat were already there, staring into the grass, Islay cradling a laser rifle, Simba hefting his assegai. Seeing him, Islay asked, "Huron. Have you seen her?"

SinBad shook his head, not taking his gaze off the surrounding grass.

"No blood," said Islay hopefully.

Simba nodded. "She has not begun to feed."

"She?" Islay arched an eyebrow.

"From the tracks I would say an adult female, three years old or so." Simba meant Barsoom years.

Tals ticked away, taking with them any hope of finding Silver-wig alive. Islay gave SinBad a haggard glance. "Got some experience with ba'aths?"

SinBad showed him the claw marks on his crossbow stock.

Islay nodded grimly. "Let's go."

"What about *her*?" SinBad nodded at Pretty Bottom, who had not bothered to draw her knife. "Thuria is up."

Islay dismissed his concern. "That Issus battery is line-of-sight, good for fifty haads in any direction in flat country."

They thrashed off through the grass, with Simba in the lead and Pretty Bottom bringing up the rear. Three locals with home-forged weapons, surrounding a tourist

with a laser rifle. None of the other offworld "ba'ath hunters" would be much help, never having seen their prey outside of a game park.

SinBad let Islay lead, covering the laird's back. Attack could come from any direction, and if something mean leaped out at them, he wanted that laser rifle safely ahead of him. The only weapon he could comfortably turn his back on was Pretty Bottom's skinning knife. If she stabbed you, it would not be by mistake. SinBad had hoped to have the young Crow sitting safe behind the energy fence, with the White apes and hangers-on. Surface-to-space missiles would have to do.

Steppe Hyenas yipped at each other out on the sward, excited by the commotion. Scavengers of all sorts liked to hang around tourist camps, hoping offworlders would do something stupid.

After a couple of haads the trail dipped down into one of the steep lush valleys found in equatorial Barsoom, deep slashes in the sward where water and vegetation collected. Canyon walls looked down on thick brush and thornwood, full of hiding places perfect for lying up and eating your kill. Wild moropus just like he'd had for breakfast stared suspiciously up at them. First a she-ba'ath with pretty prey in her teeth, then two species of humans. Enough to make any thinking herbivore uneasy.

Simba sniffed the breeze, then whispered, "She is in there."

"My wife or the ba'ath?" Islay whispered back.

"Both."

SinBad reached behind him, feeling Pretty Bottom's knee. He could hear her breathing, just behind his ear. "How you doing?"

"Thirsty," she hissed back.

He gave her a long swig of fruit juice from his canteen. Handing it back, she nuzzled his ear, whispering, "Watch out for the cat."

"Sure. You too. Watch my back." He felt silly, telling a Crow how to stalk.

"Not the ba'ath, the other cat." She meant Simba.

"Why?"

"Just beware." She squeezed his hand for silence. SuperCats heard better than both of them.

Shit, Simba was the one he half-trusted. Not good. He faced a silent stalk into deep cover, trailing a ba'ath with a taste for people. Putting a lot on the line, just to view bloody remnants of someone he had liked. Or at least lusted after.

Islay gave him a communicator to clip to his ear, then they entered the brush. Tickbird sentinels sounded out, warning the moropus herd that armed humans were tromping through their feeding grounds. Which made SinBad step even more lightly, creeping along pigeon-toed, his weight on the sides of his leather boots. At least Thuria was not looking over his shoulder. Dense double-canopy cover beat Issus interceptors for shutting out Slavers.

Visibility shrank to sofads. He could hear Islay just ahead, sliding invisibly through the underbrush. Behind him, Pretty Bottom was both silent and unseen. Comforting. No ba'ath would get him from behind.

Half a haad into the tangle, they came on Silver-wig's communicator, lying on the trail.

Flipping his sand goggles to night vision, he searched for a heat source in the tightly woven tapestry of branches, vines, and thorn twigs, a dense living wall as opaque as radiation armor. No luck. With two humanoids ahead of him, and the moropus herd munching the greenery, there were way too many heat sources. Thermal overkill.

With her hyper-keen nose and hair-trigger hearing, the ba'ath would know they were coming long before they arrived. Totally unfair. He was a sand sailor, for Issus' sake, hoping to see open sward again. SinBad jacked up the magnification on his glasses, though he could not see beyond arm's reach. Veins on the leaves leaped out

as he peered into the spaces between them, looking for anything that might belong to a ba'ath.

Nothing. Not even the odd moropus, though these retrobred rhinoceros-hide quadrupeds were all about, head high at the shoulder, weighing up to a ton. Crow warriors rode them instead of horses, which would never survive on Barsoom. These wild ones were twice as mean, and just as big, with wicked white tusks and a terrible temper—totally hidden by the bush.

Eventually they left the moropus herd behind as the spoor wound farther into the tangled morass, which just got darker and deeper. Light from above faded. Dusk was coming on. Which would give the ba'ath every advantage. If the cat had heard them, the beast would not lay up until nightfall. Simba saw it too, calling a halt.

Islay wanted to go on. "My wife might still be alive."

Simba shrugged. "Pugmarks say the ba'ath has dropped her load. We are tracking her so close, she stashed her kill. She will come back around to feed."

Laird Islay did not like hearing his wife discussed so clinically by a bio-engineered being. "Sure it's the same ba'ath?"

Simba smirked, hissing between saber-teeth, "She is."

"How can you tell?"

"By her smell. She's in heat." Hot and hungry. Simba acted like he used to date her.

"My wife could still be alive," Islay insisted.

"If she is, she is back behind us," Simba reminded him. "This cat is no longer carrying her."

SinBad looked at Pretty Bottom, who nodded in agreement. At least Simba was not lying.

Islay put in a call to camp, telling the ship to meet them at the edge of the tangle. Hefting his laser rifle, he told SinBad, "Thanks for watching my back. Want them to bring you something with punch? These are line-of-sight, self correcting, and can burn through battle armor."

"No thanks." SinBad had his crossbow. Offworld weapons were wonderful, but he did want to kill a ba'ath five haads away—it was the ones up close and angry that worried him. And none of them wore battle armor.

Simba stuck to his spear. They turned about, backtracking, looking for the spot where the cat had dropped her prey. There had been very little blood spoor, just a few drops on the grass tops. Which gave Islay hope, though the ba'ath could have broken Silver-wig's neck, then stashed her body high in the crotch of a tree, to snack on later.

SinBad looked up this time as well as down, searching for blood streaks on branches. He was no longer looking for a ba'ath, but a body. That made him sad. Going from fear to grief, without a good moment in between.

All he saw on infrared was moropus-sized heat sources. The herd was munching its way deeper into the brush pile. These giant browsers had thorn-proof hide, and clawed limbs able to strip off leafy branches and succulent bark. They were retrobred to turn thorn trees into fertilizer and provide surface transport for anyone crazy enough to tame them. Like the Kick Belly Crow.

Without warning, a cry rang out, a ba'ath screaming bloody murder only twenty paces away. Maybe their ba'ath, keening like crazy.

Brush exploded around him. SinBad saw branches fly, and heard bushes erupt with the menacing grunt of an angry moropus. Just in time, he was jerked backward, out of the way of the huge beast that thundered past him, headed for the tall grass.

Ahead of him, Islay just had time to turn and shoot, pegging the charging moropus with a perfect laser beam brain shot.

Clutching his useless crossbow, SinBad watched the galloping behemoth collapse in a heap at the visiting laird's feet. No explosive bolt could have done that—not one

fired by him. Pretty Bottom had heard the moropus coming, and she'd pulled him out of the monster's way. Leaves rained down on both of them.

Before SinBad could take a breath, another moropus burst bellowing from the brush, following in the steps of the first monster. Seeing its mate lying prone in the trail, the enraged moropus spun like a prize quarterhorse, charging at Islay.

Again the laird took aim at the animal's hideous head. *Moropus barsoom* had two tusk-shaped canines rising from its lower jaw, to add to their great clawed feet and murderous temper—which was why Crow warriors liked to ride them whooping into battle.

This time Laird Islay of Islay just stood there, staring into his rifle sights, until the charging moropus was on him. Swinging its gleaming tusks, the beast hooked him in the ribs, throwing Islay high in the air.

When he landed, the moropus was there, raking his remains with those tremendous razor claws. Just as the moropus was warming to its work, SinBad squeezed off a shot, aiming at the base of the neck.

Without waiting to see what happened, he cranked another round into the crossbow, then took aim again. Jackpot. His first shot had spined the moropus, dropping the thrashing herbivore next to Laird Islay.

He fired anyway, blowing out the back of the dead beast's head, just to be safe. Always kick an enemy when he's down. SinBad had done nothing to disturb this four-legged ogre, even going out of the way to avoid him and his friends. Blame the ba'ath if you liked.

Cranking in another round, he went to check on Islay. Miraculously, the laird was still alive, though not by much. Shooting that mad moropus had given Islay half a chance.

Simba appeared, spear in hand, calling for med-evac on his communicator.

Night continued to fall, and the ba'ath was still out there, after taking out a wife and husband who had come a dozen light years just to shoot her. Unless this was another ba'ath, toying with them—which SinBad doubted. A ba'ath had way better things to do, unless it had a bug up its butt. This was the cat they had trailed, hounded, keeping her hungry and horny, getting some of her own back. Crossbow cocked and ready, SinBad loosened his loincloth, which had been sopping wet ever since that first moropus burst out of the brush.

The orbital yacht landed, and he helped hustle Islay into an autodoc, tossed and trampled by a beast that is casually ridden by Crow children, several at a time. Small wonder. Barsoom had dozens of ways of taking you down, none of them nice and easy.

Simba insisted on setting up an overnight camp, so they could go looking for Silver-wig at first light. "She is now my employer."

With Islay in a coma, his wife was in charge of the hunting party. Unless she was already eaten.

Thuria was down, and Pretty Bottom meant to make the most of that opportunity, throwing her arms around him, whispering, "My wonderful hero."

"Who wet his loincloth," he informed her.

"So did I," giggled Pretty Bottom, who was not wearing one.

"Come, my chieftain." She dragged him into the thicket, aiming to celebrate their brush with fate. He went, eager to get out of the wet loincloth, and he owed her for saving him from being trampled. In the midst of snatching life, she licked his ear playfully, whispering, "Simba is a Slaver."

So that was it. SinBad nearly missed a stroke. It fit. The leaderless hunting party had been dragged from behind its energy fence, into a tangled valley that stretched out of Issus range. And in half a zode, Thuria would be up. "Don't worry," Pretty Bottom brought him back to business with a kiss, "he's just a cat."

SuperCat actually. Bred to be better than SinBad, or at least more dangerous—faster, stronger, smarter, with big teeth and claws. Ba'aths called back and forth in the darkness. Maybe even their ba'ath, looking for a boyfriend.

When they were done, SinBad asked, "How do you know Simba's a Slaver?"

Snuggling against him, Pretty Bottom replied sleepily, "Who else would hunt ba'aths at Wife Stealing Time?"

Good point, SinBad admitted. He was not here for the ba'aths. Simba must be at least as smart.

"Last year, this same cat was lurking about, when Arapaho Woman disappeared, along with her little sister. Only then he was a smuggler, trading offworld jewelry for civet skins."

"So you bought some?" SinBad saw where this was going.

"For five skins. It is pinned to my possible sack."

Which was aboard his sand sail, thank Issus. Haads away from here. Passing out radio-tagged trinkets to winsome young nomads was an old Slaver trick. No wonder they had checked out his sand sail. Her possible sack had drawn them straight to it.

"Killed the civets myself," she murmured. "Strangled them to save the skins."

She was soon asleep, happy, fed, and pregnant, safe from Slavers and ex-boyfriends, turning Wife Stealing Time into time away from the tipi. Ba'aths called in the darkness, mating cries, from close at hand, having their own tryst in the thicket. She-ba'aths in heat kept finding mates, even after becoming pregnant, to keep the males guessing.

Simba came on the communicator, sounding a general recall.

Not trusting the communicator, which doubled as a tracking device, SinBad reported in person, leaving Pretty Bottom asleep under the thorn bushes. She did not fear ba'aths, and strangled wildcats barehanded, so she should be safe until Thuria rise.

He found the SuperCat waiting at the yacht's airlock. "With no energy fence here, we should all sleep on the yacht," the bioconstruct explained. "There are ba'aths about."

No shit, Simba. More all the time. "I am wondering about that laser rifle."

"Want one?" Simba grinned. "Paint the target and pull the trigger, rifle does the rest."

Not always. "Islay's rifle did not fire."

Simba shrugged. "Transient malfunction. I retired that one."

Another ba'ath call sounded, even closer.

"Better get your mate," Simba suggested.

Pretty Bottom was hardly his mate. Goes Ahead had gotten in ahead of him. Along with Alligator Stands Up. But he was not about to argue personal relations with a bioconstruct and suspected Slaver. Nor was he likely to spend the night aboard ship. SinBad left, pretending to obey.

He made his way back through the thorns to where he'd left Pretty Bottom. But there was nothing there. Sleeping booty was gone.

Damn. No note or token. No sign of a struggle, just gone. How like her. Determined not to spend the night alone, SinBad slid two more explosive bolts into his crossbow to fill the clip. By now the ground was cool enough for her to leave a good heat trail, so he flipped his goggles onto infrared.

Her heat trail appeared at once, headed away from the moropus thicket deeper into the canyon. Great. He had wanted to sit out Thuria rise, curled under a thorn bush with his cute Crow companion; instead he was headed deeper into a canyon that had already swallowed two wealthy offworlders. Ba'aths called back and forth in the blackness, sounding like they had made a kill. Hopefully no one he knew.

With each cautious step, he remembered the scratches on his crossbow stock. A ba'ath with a bad attitude had jumped him at point-blank range, without even a warning growl. He got off one shot before the ba'ath batted the crossbow out of his grip, then bowled him over.

Luckily, when shooting at arm's length, he rarely missed. Instead of being ripped to shreds, a dead ba'ath landed in his lap. When he heaved the beast off him, he'd found an arrow broken off in the ba'ath's belly, a festering wound that must have hurt horribly. An Apache arrow, but try telling an angry ba'ath that you are Huron. He did have hard words for some local Apaches, who laughed to hear how he'd found their arrow.

Slowly the heat trail faded. He was not moving fast enough to catch Pretty Bottom, wherever she was going. Crow women were always up to something, which was why they had Wife Stealing Time.

Then, without warning, the glowing trail got stronger. Something close to Pretty Bottom's size had recently passed through. He picked up the pace, finding the trail getting brighter and fresher. Encouraged, SinBad kept his crossbow in front of him, ready for anything.

Almost. Sitting in a grassy clearing ahead was the source of the heat trail, a barefoot and bedraggled Silver-wig.

Her wings were drooped and broken; her silver body paint was scraped off, revealing large swaths of pink flesh. Clearly happy to see him despite the cocked crossbow aimed at her bare chest, the offworlder smiled wide. "Hi, Huron."

Why was he always drawing a bead on beautiful women, thinking they were ba'aths? He lowered his bow. "Actually, my name is SinBad."

"Really?" Silver-wig seemed surprised.

"What is yours?"

"Deirdre. Deirdre Islay."

Very offworld, and meaningless, but somehow pretty. "We thought you were dead."

"I thought I was dead," Deirdre admitted, "when that ba'ath grabbed me. I fought, screamed, and fainted."

Then the cat carried her off unconscious, dropping her when pursuit got too close. Doubling back on her tracks, the ba'ath led her bungling pursuers into the moropus herd. SinBad asked, "Are you hurt?"

She shook her head. "Grass burns, a couple of nasty cuts. But not a tooth mark. I think he dragged me by my wings."

"She dragged you," he corrected her. "You were grabbed by a female. On Barsoom both sexes have black manes."

"Oh." Clearly she knew very little about the beasts they'd come light years to kill.

Yet she had survived the ba'ath attack unbelievably well. In fact, her real troubles were just beginning. He asked, "Are you cold?"

She nodded. He took off his buckskin jacket and gave it to her. He had just a light linen shirt underneath, but this was spring in the tropics, about as mild as Barsoom got.

Shedding broken wings, she pulled on the jacket, not bothering with the bone buttons, asking instead, "Have you seen my husband?"

He had seen parts of Laird Islay his wife never had, but SinBad did not say so. Who wanted an hysterical tourist on their hands? "He's aboard the yacht."

She looked about. "Where is that?"

"Close by." Thuria would be up in a few xats. Who knew what would happen then? Not him. "But we need to hide first."

"Hide? Why?"

He nodded at the night sky. "The Slaver Moon will be up soon."

"How can you tell?"

"It's not hard, when you have grown up under these stars." What nomad boy did not thrill at Thuria rise, watching the girls scurry for cover? Imagining himself saving some beautiful offworld princess from Slavers, and winning a warm reward. Like a lot of boyhood dreams, the ideal totally beat reality.

He hustled the winsome tourist into the underbrush, where she could not be seen by Thuria light. Though there was still their body heat. If Simba told the Slavers where to look, a diligent search would find them.

Clearly, Deirdre Islay did not look forward to spending another zode-and-a-half in the bush, not with some strange Huron. She told him earnestly, "Get me back to my husband, and I will see you well rewarded."

Not likely. Her husband was in an autodoc. Scratched, bruised, and hiding under a bush in a borrowed leather jacket, Silver-wig was now the outworlder-in-chief. Sin-Bad just did not have the heart, or the need, to tell her. Not yet.

He had way bigger worries. Thuria was rising, spreading enhanced moonshine over the landscape. Then came the boom of an orbital shuttle breaking atmosphere. Slavers were on their way. He unshipped his crossbow, for all the good that would do.

"What's the matter?" Silver-wig asked.

"Slavers." Unless it was another boatload of tourists, coming for a wild moropus nightride, or something equally useful.

Tals ticked away. Then without warning a shadow fell over them, blocking out the Thuria light, then moving on. Silver-wig whispered, "What's that? Slavers?"

Smelling a familiar cat box odor, SinBad slid over and silenced her with his hand, mouthing a single word, "Ba'ath."

Silver-wig's eyes went wide. Another silent shadow passed, then another. One by one, more ba'aths came padding up, an entire pride, settling into the brush around them. Soon they were surrounded by the cat odor, and the soft regular breathing of a dozen sleeping ba'aths.

SinBad set aside his crossbow. He did not have enough bolts to do more than make them mad. Silver-wig whispered, "Can they hear us?"

Sure, if she did not shut up. He whispered back, "They do not need to. They can smell us."

"So, why don't they attack?"

"Maybe they're not hungry. Or just too sleepy. Ba'aths do not kill for the fun of it." Like offworlders do.

She stroked his cheek. "I am sorry."

"For what?"

"Everything," Silver-wig sighed.

He smiled at that thought. "Not your fault."

Happy to hear that, she relaxed alongside him. Soon she was asleep, putting an end to a harrowing day. He closed his eyes as well, no longer worried by their heat signature. So long as they lay close together no one would spot them amid the ba'aths.

Lying with eyes shut, listening to blond breathing, he suddenly heard the whoosh of a ship taking off. Looking up, he saw a flash in the night sky, half hidden by the thorn brush. Someone was lifting into orbit.

He relaxed again. Thuria set, then first light showed in the east. Slavers had let sleeping ba'aths lie. SinBad decided to do the same, waking Silver-wig, whispering, "Let's get going before they do."

She saw the sense in that, getting up and silently following him out of the brush into the long grass, leaving the ba'aths behind. As they neared the mouth of the canyon, SinBad told the offworlder to wait while he wormed his way forward.

Just as he thought, Islay's yacht was gone. All that remained was a circular dent in the grass, empty as a crop circle. He slithered back to inform his companion, who told him, "Give me your communicator, and I will call my husband."

"Let me make the call," SinBad suggested. "They do not know you are alive." Yet.

"So? My husband will be happy to know."

Now he had to give her the bad news. "Your husband is in an autodoc. Trampled by a wild moropus."

Lady Islay looked aghast. "Will he live?"

"Maybe." If the Slavers aimed to hold him for ransom. "Just let me make the call."

He did. A chirpy computer voice informed him the yacht was in low orbit, while the owners were with their "hunting party" on the surface. Call them there.

No need to do that; the Islay still on the surface was crouching next to him in the tall grass, wearing his buckskin jacket and not much else. Hearing what the yacht had to say, she told him, "Give me the communicator. That ship is voice-coded to me and my husband. I can shut down its drive, then trigger a distress call."

"No, you won't." The voice came from behind them, and had that SuperCat lisp caused by talking around saber-tooth canines.

SinBad turned to see Simba standing in the grass, with a silver communicator clipped to his ear and a laser rifle leveled at him. The bioconstruct had stayed behind, waiting for them to break cover and open a channel. The only real question was why didn't Simba pull the trigger? SinBad's own bow was at his side, cocked and ready, but he dared not raise it. The SuperCat had super reflexes.

Only Deirdre Islay did not get it, saying, "Simba, what are you doing?"

Her hunting guide grinned. "I was looking for that pretty young Crow. But you will do. Please, stand aside."

Simba wanted a clear shot.

Deirdre stood up, stepping squarely into the line of fire. Flourishing the communicator, she warned the SuperCat, "You shoot, and I will punch MAYDAY, disabling the yacht."

Simba snorted. "This rifle can shoot right through you, and him."

Sliver-wig shrugged. "Then you lose everything. You will never get that yacht out-system, not with me dead and my husband in an autodoc."

There was a Navy ship insystem, the suburb-class corvette *Tarzana*. Any attempt to alter the yacht's registered flight plan would arouse suspicion. If Deirdre punched MAYDAY, Simba could shoot them, but he would lose his prize. And the Slavers aboard the yacht would be prisoners. Stalemate.

For the moment, Simba kept the laser rifle leveled. Thuria would be up soon, then Slavers would swarm over them, jamming the communicator and firing sleep gas, eager to have Deidre Islay and her husband's starship. Deirdre stood clutching the communicator while Simba cradled the rifle, waiting.

Slowly, a big black-maned ba'ath ambled nonchalantly up, not even looking at them, followed by another, then another. Simba's grin turned grim, as the pride gathered around them, crouched and waiting. Riding atop the biggest ba'ath, a great sable-headed male, was Pretty Bottom. No wonder her parents called her Beast.

"Kaor," the young Crow called out, holding tight to the black mane.

"Kaor," SinBad replied, never happier to see her, or a pride of ba'aths.

"What do you want?" Simba demanded, eyeing the ba'aths warily.

"That Huron," Pretty Bottom pointed at SinBad. "And the offworld woman."

Simba shook his head. "Get any closer, and I will kill both of them. Then you." He still had them, if he could stall until Thuria was up.

"You are the one who will die," Pretty Bottom warned.

"Maybe." Simba was counting on his superhuman reflexes and self-correcting sights. He could do a lot of damage before the ba'aths got him.

"Certainly," Our Lady of the Ba'aths replied, raising her slim hand.

"Don't!" Simba aimed the rifle at her, a curved claw on the trigger.

Pretty Bottom froze, hand held high. Ba'aths snarled at the SuperCat, but did not spring, waiting to see what the Crow woman would do. This was not their fight. SinBad weighed the odds, trying to decide if he could aim and shoot before Simba fired. Not likely.

He did not have to. An arrow streaked from downwind, hitting Simba in the neck, slicing through the cat's jugular. The SuperCat fell forward, dead before he hit the ground.

SinBad exhaled softly, barely believing his eyes. Another arrow thudded into the fallen SuperCat, ensuring he was dead. Simba did not twitch.

Deirdre was on the communicator at once, calling the Navy and shutting down her ship.

Looking to see where the arrows had come from, SinBad saw a Crow warrior emerge from the thorn trees, his feathered bow in hand, riding a dark red moropus. He wore a scout's wolfskin, and hail-spot body paint, making him as deadly as an ice storm on a sunny day.

Pretty Bottom grinned. Ignoring her and the ba'aths, the Crow scout dismounted, keeping a tight hold on his rope reins, saying, "Kaor, Huron."

SinBad returned the Crow's greeting, asking, "To whom do I owe my life?"

"Her." The Crow casually pointed his bow tip at Pretty Bottom. "She is the one I came to get."

This was Wife Stealing Time. But the Crow was not going to get what he wanted, not amid a pride of ba'aths, who were plainly doing Pretty Bottom's bidding. Being practical, the scout drew his knife instead, then bent over and deftly skinned the dead SuperCat as if it was a tawny fur coat. He took the head as well, not wanting to leave the great grinning saber-teeth.

Rolling up the bloody hide, the Crow tied it to the back of his white-tusked moropus, then remounted. With a wave to the women, the warrior was gone.

Ba'aths began to feed on the Slaver's skinned and bloody body. SinBad turned back to the pregnant Crow. "Was that Goes Ahead?"

"Of course." How many boyfriends could she have? Sliding down off the ba'ath, she gave him a hug. "That is my baby's daddy. I am glad you met him."

"Me too." As SinBad said it, a boom sounded overhead.

Pretty Bottom looked up. "Slavers?" Thuria was still down.

Deirdre Islay shook her head. "No, a Navy gig."

Sure enough, a small silver ship landed in the long grass, guided down by Deirdre's MAYDAY call. Navy crewmen in battle armor tumbled out, scattering the snarling ba'aths.

"Don't hurt them," Pretty Bottom shouted. She turned anxiously to Deirdre. "Tell them they saved you."

She did, and the Navy held its fire. Before they hustled her aboard the gig, Deirdre Islay asked, "How can I repay you?"

"Give me your wig," Pretty Bottom replied.

"My wig?"

Pretty Bottom nodded eagerly, so Deirdre handed it over. Giving a war whoop, the Crow waved her silver trophy, like it was a fresh scalp.

Later, when Thuria had set again, Pretty Bottom insisted on making love in the tall grass, wearing only her new hair. But that just made SinBad think of Silver-wig, and he never saw her again. ○

DERIVATIVE WORK

They once pursued you with pitchforks and torches.
Now patent filings jab your mended flesh
until you are nothing more
than nucleotides ripe for profit.

You're their De minimis Man.
Everyone still wants a piece of you.

You remember?
His sweet, triumphant shout,
cry of manic confidence squelching utter disbelief
that you were alive.

He stitched you together
in a crazy quilt of proteins,
his grave-robbing the least of your problems
in a world where infringement means damnation.

Now the ghosts cobbling your soul
haunt you by proxy
for strands and snips,
wishing you the death of a thousand splices
for what your creator took from them.

Their affidavits knife you
back into the pieces you are:
This one's pharmaceutical.
That one's forensic grail.

You thought you were your own man.
You're just a collage
reduced to proprietary nightmare.

Filched compositions of matter and
scribbles of R&D bottom lines.
And an army of Doctor Frankensteins
can never repay
your father's debt to science.

—Elissa Malcohn

FLOWERS OF ASPHODEL

Damien Broderick

A number of Damien Broderick's novels from the last thirty years are being released in 2009 by SF publisher Warren Lapine's new Fantastic Books. The first two are *The Dreaming*, an updated revision of his award-winning 1980 novel *The Dreaming Dragons*, and *The Judas Mandala*, where "virtual reality" and "virtual matrix" were coined. Two new collections cover an even longer span. The first, in summer of 2009, was *Uncle Bones*. Its title story is from this magazine; three other novellas and novelettes, revised or extended, reach back to 1964. In late 2009 and 2010, several more Broderick novels will appear from the same publisher, as will a "Best Of" short story collection titled (also from Asimov's) *The Qualia Engine*. "The Flowers of Asphodel," which is written, in part, as a homage to Roger Zelazny, will also be reprinted in that collection. Meanwhile, E-Reads has released a trade paperback edition of *Quipu*, a drastic reimaging of his 1984 mainstream novel *Transmitters*.

I was pulled up out of the Big Sleep well before my due date, so I ached everywhere, pretty much exactly the opposite of the way you're supposed to feel at the end of your sentence of Redemption.

"God awmighty," I said, chewing at my dry tongue with partly regrown teeth and blapping at my parched palate, "this is cruel and unusual punishment." I blurrily glossed elapsed time: less than six years in the rejuvenation tank, traversed by dreams and nightmare, myth and remembrance.

Apologetic machines of loving grace hugged around me, breathing warmth and sweet perfumes, avatars of a Singularity that apparently was still stalled out. Blame the slimy Bugs, the Old Ones, the Archaea at the heart of world. I always do. "We're so sorry. The *res publica*'s need is great. We must find her, and you are our only lead."

"Europa?" The roots of my irradiated new teeth ached, along with my sinuses, and my esophagus burned with gastritis, and deep in my groin something ached horribly, as if I desperately needed to take a piss and couldn't, so it was my damned prostate, probably. I moaned and groaned and didn't care who heard me. "I haven't got a clue where she is now. Somewhere in infinity. Get away from me. Put me back. I have a right to my full Redemption, you callous bastards."

"Politesse is advised, Asterion. Recall your cause for protraction."

So they still blamed me for her absence, her apostasy. I sat up on the bed and tried to get my bearings. No walls, which was pretty funny under my jailed circumstances, but we weren't outdoors because I could not find any trees or brooks or birdies swooping in an Arcadian sky, nor bellowing gales of industrial soot, whichever it was out there by now. Just wavy sheets of light, like some goddamn sci-fi flick from my childhood. Or earlier: Dr. Spock in *Star Wars* against a blurry back projection, or however they did it a century or more ago. My memory for the period is not what it used to be. Except for the occasional harsh incident I can't get shut of, la la. I rubbed my own ears, which were appropriately rounded rather than pointed, and said, "My name is not Asterion, you mechanical buffoons. I am Isaac Hersch, a human, not a god."

"You are both, of course. But please accept our apologies, Mr. Hersch."

"If you're going to stand on ceremony, that's *Doctor Hersch*. But call me Isaac, for god's sake." *God's sake*, I thought, the phrase echoing with bitter irony in my own ears. I'd ached through more than half a century of unprevented aging—my punishment, my protraction—with the god-ruined, endlessly youthful gullibles of Earth calling me by the ancient Cretan name of Europa's mythic spouse: Asterion, Zeus-cuckolded father of Radamanthus, Minos, and Sarpedon. Labyrinthine foolishness.

But the machines were doing their favorite thing again, *instructing* me.

"Stand on—" An intriguing phrase, Isaac. It has been deleted from general usage, as has the honorific."

"On the *Index Expurgatorious*, eh?" I climbed down and tottered about a bit, finding my legs. My voice sounded silly, and my small teeth felt ridiculous. I had a bit of a check around; my old appendix scar was gone, and my penis and sack were full size and kosher, so this wasn't part of the punishment.

The machines were saying in their neutral tones, "Nothing is forbidden, Isaac, and nothing is obligatory. We decree no *Index Librorum Prohibitorum*. Courtesy is all. Formal titles are avoided now. They are often redundant and always offensive."

Nothing had changed, then. Or maybe everything had changed. I sat down on the bed's edge again and waved them away.

"Go somewhere else. I need some time."

"Of course you do, Isaac. If you feel hungry or thirsty, just ask. We're just a call away."

Of course you are, I thought.

It paused a beat. "Yes, it's Europa."

"She hasn't returned, I take it?"

"You sent her away, Isaac."

"That was never proved," I said. My lips felt all wrong. "And besides, the pictures were faked. What the hell do you want? Put me back in the tank."

"We need your advice. The probability approaches certainty that your wife intends an iterated Banach-Tarski decomposition on the cosmos."

Huh? Yeah, I didn't have a clue what they were blathering about, either. I hit the glosses, found something that might be relevant, didn't understand it even after a download straight to the cortex. Maybe my half-rejuvenated grayware wasn't up to it yet. Surely nonsense, yet two math guys had come up with this back in the early twentieth century and apparently nobody had shot it down yet. You could pull a sphere apart, chop it down to points, and put the parts back into two perfect replica balls exactly the same size as the original. Rinse, repeat, as many times as you liked. I guessed that Europa planned the same trick with the universe. Being inside the infinite corridors of the Asterion probably made it doable. I shrugged. If anyone could, it was my wife, the Goddess of the dead and the improbable. "So?"

"You will find her. You will prevent her. You will bring her back. *Bon soir*." The machines withdrew into pale aurora.

Night time, eh. (Not really, as it turned out. Not quite, if I proved nimble.) After a while I stumbled in their wake, arms outstretched. No need; the waves of pastel glow receded and closed behind me, like mist on a crisp morning. It wasn't cold. A jolly twenty-two Celsius, I guessed. No walls or door or windows. And here's why that'd caused me to chuckle—

One day I'd gone to San Antonio's Central Library, Ricardo Legorreta's kiln-red marvel half as gold as Enchilada—this was back near the beginning of the twenty-first century—and fought the computer catalogue for a while before I gave up in disgust. Short attention span, even shorter patience limit. Crossed to the Assistance desk, where a young woman fairly quickly offered me her attention. She was Hispanic-Aztec, I judged, with a broad brown face, what looked like a cold sore on her lower lip, and rather good freckled boobs considerably on display from a boldly patterned Mexican blouse.

Yes, I remember *some* things from back then.

"I'm looking for an old text," I said. Cold music moved behind my eyes and ears, red-lit from a dying sun and the tramp of Martian war machines; I fancied a Well-sian libretto. "Can't find it in the catalogue. I believe it's called 'The Theory of the Perpetual Discomfort of Humanity.' Some guy in a bar mentioned it. Might be a chapter in a collection with some silly title like *Select Conversations with an Extinct Uncle*. It's by H.G. Wells."

She gazed at me as one might when confronted by a speaking toadstool, or toad. After a time she found some scrap paper and stood with wood-encased graphite pencil poised. "How do you spell that?"

"How do I spell *what*?"

"The author's name."

"The same way everyone else does." I mean, Christ, this was one of the most famous men of the turn of the twentieth century all the way through to the first nuclear war. When he was young, his essays and books probably outsold anyone else writing in the English language. Could things have reached this pitiful pass? She probably had a Master's degree in Library Science.

She waited, head slightly forward now on her neck, blank, moon-faced, pretty if you went for the blank and lunar.

"All right. H. is spelled 'H.' G is spelled 'G.' Wells is—"

"What?"

"—spelled like Walls," and I gestured helpfully at the nearest one, which was covered in shelves laden with videos, "but with an 'e' instead of an 'a.' That's W-E-L-L-S. As in, I don't know, the great banking institution, Wells-Fargo, but without the Fargo. Like the deep water holes Arabs dig in the desert—"

She slapped me hard across the face, breaking both the pencil and my nose.

Soulreaders, I married her.

But you knew that already, obviously. There are flowers also in hell.

Just the sort of thing I remembered in high definition. But after the machines pulled me out of Redemption early, and left me to muse on such memories amid painted word effects, painted deserts, painted horses maybe, all limpid gauzy Rothko films of light boundary-blurred, I dragged myself back step by step into my waking body (as they surely meant me to), tottering to stumbling to walking to striding as balance and kinesthesia kicked in, toe after heel, trot trot that painted horse. If you haven't got clue one what I'm maundering about, go hit your glosses, your access, your dreary not-real-memory augments, and follow trustingly in my wake, dear children mine. Dear children of Europa, I should say, perhaps. Mine only in name, yes,

yes, I grant you that. She was a godwhore, that wife of mine. Oh, I know that's a deleted term, and I'm an embittered cuckold, which is another. She knew how to take the bull by the horns and dive right in. Metaphor or simile? Never mind. You, they, wanted me to give her a cold call, one old chum to another, hubby to wifey, How do, sweetheart? Got the time for a quick hug and consult with this baby-toothed old fart you married so long ago, after breaking his nose and later, you know, his heart?

I walked in bare feet and altogether naked through the last transparencies of colored light onto a high balcony of gleaming steel and heraldic enamel (evening light scattered on scarlet, kingly purple, emerald and forest greens, beasts addextré of the sun in splendor, and more) thrusting outward from the mountain above a Mexico City of dreams, which is to say the real city, probably, or as real as any habitation gets these days. Behind and above us Volcán Iztaccíhuatl smoked faintly, but his fires were damped, like mine.

"Bring me clothes," I told the machines, breathing sweet cool air. No glass held that air from my balcony. I could fling myself over and fall headlong to the outermost palaces of the Ciudad, should I choose. Fat chance.

I shook the things off when they tried to dress me, pulled on soft underwear, breeches dark as night in the era when the skies were not yet filled with solar-power jewels, boots to my knees, snowy blouse, a jerkin. This garb would have lent a more dashing effect had I looked forty years younger, as I'd anticipated for my release from protraction. I left the hat; it might as well have been a ceremonial crown, and I'd given up that game long ago.

"All right, take me to the Asterion." I had a hunch my voice was firming, now that I'd got used to my throat, and perhaps my resolve with it.

We flew high above the lovely old, renewed, still castellated city in a sleek craft with swept-back lifting vanes like a swallow's wings, out to sea within fifteen minutes, across rippled blue and surging green, and found the island where I'd left it, off safely to one side of the Pacific. It has no name, only its purpose: it is the Asterion, the house of infinite corridors, crowded with monsters you never see because they are too far apart (the paradox of infinities), hopeless for exploration without an unfurled string falling behind your heels, but no string could be long enough, so the quantum magic of entanglement must do. And the trace of love, or pain. The ringing echo of it, somewhere in the bone.

We fell straight down, lightly, landed. I debouched, shading my eyes, wishing I'd brought the flamboyant hat after all. Here it was high noon. The swallow gulped up gravity and flung its wings into the blue. I looked around. Elysian Fields. No, not that. A turtle moved slowly on the beach, and greeny six-ply flowers grew in profusion on their woody stems at the shoreline. That made me smile. Meadows of Asphodel, the chosen taste treat and sustenance of the dead, *Asphodelus ramosus*, planted here to amuse my wife. Perhaps not so funny. As I recalled the old myths, she was exactly the *Enelysion*, smashed by the Glorious' lightning bolt and transformed, so her rightful Groves were Elysian—but mine, sure as eggs is eggs, were merely greeny Asphodel, token of the boring dead, the billions ordinaire, the unheroic, those never touched by the electricity of Zeus or his jaunty pals. I sighed, waved to the turtle (probably as old as I, at least in this incarnation), turned, entered the first doorway of the first corridor. Not Tartarus, at least; not eternal punishment for treachery. I hoped.

"You are returned, my lord," a sepulchral voice intoned from dimness. "Welcome."

"Oh, cut the crap." I hate all that.

It seemed, as ever, that the dead crowded all about me.

These dwellers in the infinitely alternate, unexpressed realities didn't look dead, of course. It was something like being jammed in a food riot of the ill and exhausted,

but that's overstating it, mostly. Stranded at an international airport, say, circa the time I met Europa and she busted my snout, all the obedient passengers loaded down with their worldly possessions in cloudy plastic bags, looping crocodile-lines of ticket holders dragging their way from scanner to intrusive sniffer to insolent or uncaring document inspector, lighted destinations and departure times flickering, changing, blanking to black, dashing hopes, an antiperspirant-muted stench of frustration and brewing hatred, children's voices rising like startled bats above the banal, echoed, reechoed adult conversations, mutinous laughter, resigned mutters. Like that, and nothing like that. I could try to sing it for you, but I am not in best voice just now, and besides the atonalities would fingernail your blackboards (gloss it, damn you, check the index, chase the lexicon).

As they noticed my presence, some looked away, ashamed or embarrassed. Others, as you'd expect, pressed forward, mendicant or belligerent.

"Can you help—?"

"Got any change, buddy?"

"My little daughter, I can't find—"

There was not much I could say, so I didn't. They were not really the dead, I suspected, most of them. In that library where I met and anti-woo'd Europa, I had glanced inside enough volumes of cosmology and quantum theory to appreciate the theory of infinite worlds, overlapping, intertwined, shadows of each other, a multiverse. The machines assert that this is the very nature of the Asterion, and I am not theoretician enough to dispute with them. Here, any place is another place. So this multitude was probably a probability of probable multitudes, if you like. It didn't make them smell any better en masse, or calm the short hairs that always rose up on my neck and arms when I passed through their muttered despair. Did each of them realize at the sinew and artery how small was his likelihood of achieving observed reality, how small hers of persisting beyond a shadow's moment? Was this the source of their grieving?

That ontological concern was not mine, at least; I know myself to be anchored all too firmly in the plenum of Europa's indulgence.

One came forward, heavily bearded, in frock coat, pince-nez and polished boots, clearing a path and, it might have seemed, directed me through fourteen corridors, in so many colors (shades, if you will; a little graveyard humor), brightening as we maneuvered toward that transit aperture I like to call the Wardrobe. Don't bother looking for the gloss, it's sure to have been deleted. Another pleasure from the library of my past, where I read books, books, books, when I wasn't filching their contents for my songs. Corridors of slow dim heat, warming red, toasty orange, yellow bright as molten gold, green of sun-dazzled leaves, hot neon blue, a glare of violet, ultraviolet, darkness visible. I spoke to this one in his coat and beard as we made our way toward the Wardrobe and Europa; I was drawn by the entanglement of our conjoined quantum nature, the Ariadne thread that linked me to her lips, her breast, her womb like a filament of gleaming spittle or stringy semen. I hesitate to say umbilicus, for I was her spouse, not her child, even if Europa is now Mother to us all: good Mother, good-enough Mother, phallic Mother, Vagina Dentata in bad seasons. It might have seemed to the pressing ghost onlookers that my companion drew me on. (I could give you his name, but why bother?) No, it was I who nosed out the direction, like a spider snurfing up a web already spun—but that figure tangles the gender roles, damn it, for it is the female spider who spins and resorbs her web. Never mind. It was hardly gender role anxiety that vexed me. Call it ontological insecurity after all. Europa, the machines had claimed (if I understood them), was thinking of drawing down the curtain on the universe and reopening elsewhere. On Broadway, perhaps, if our original had begun off-, or off off-. Or more likely the Met, Palais Garnier, La Scala, Covent

Garden. Somewhere where the lights were brighter, the crimson and blues and violets sharper, cleaner, powered up to the max, a glissando of unsung songs awaiting the premier coloratura. La Europa, diva of universes.

Starfish, stiffened by the Sun. Take them to the new Jerusalem.

I sound bitter. Well, perhaps.

Here's a story you won't have in your annotated files, soulsuckers—unless your sly probes winkled it out of my torpid brain in warm Redemptive sleep. (Europa assured us all that such invasion was forbidden, the least and last redoubt of our selves, but can her undertaking be trusted? Let us assume so.) Well, then:

Years ago, before I met and wed Europa, before our babies were born, before I had cause to wonder if indeed they were *our* babies or only *hers*, I shared a downtown conapt with a dark-skinned computer programmer named Barney Austen. No relation to Jane, I'm fairly sure; the fine arts baffled Barn, and his atrocious taste in gangsta music led me to some interesting moves in my own. I took the upper half, he downstairs, with bathroom and kitchen in common. I was writing my first would-be satirical libretto to an eleven tone melody (*Noah Tall*; Libretto and Score: Isaac Hersch), muttering bits of canto to myself as I mooched up and down the stairs, and heard one day an outraged squeal. Felt something underfoot, soft but with bones. My heart squeezed tight. I'd stepped on a striped kitten. We had no kitten. Barney apologized when he removed his headset and checked in from full code immersion in his system. Some kids had ambushed him outside the local HEB as he exited with a week's groceries and wine, had foisted this scrawny bundle of girl cat on him. "That's Daisy," he told me. "She's already toilet trained. I have a litter box for her in the kitchen."

"No, you don't," I said. "You have a litter box in your study."

Daisy soon developed suspicious bumps behind, and was a boy. He sprayed tentatively after a month or so. "Off with them!" I demanded, but Barney was too busy, and besides the vet insisted that we wait two more weeks. I was snatched from my work the next morning by raucous outrage. I'd just coaxed an especially edgy diapason from my synthesizer.

"He jumped up on my desk," Barn told me. Daisy was nowhere to be seen, cowering somewhere; we'd agreed he was too young and inexperienced to be permitted access to the sidewalk, as the chances were good he'd tear into traffic, instant roadkill. "I thought it was charming. Then he climbed into my work product tray and *pissed* in it!"

"He's confused," I said. But in the evening, ten minutes after I got back to work after a pizza and beer supper, Daisy provoked more cries of fury. I galumphed downstairs. "What now?"

"The little shit sprayed my leg!" Eyes narrowed, Barney was dragging off his ratty old track suit pants, hopping toward the sink.

"He's in love," I explained. But that explanation had worn thin by the fourth occasion, the following day.

"Crap. It's your scuzzy noise. It sucks, man."

I never learned what became of Barney and his angry, besotted animal, because *Noah* crashed and fizzled (and who could blame it, or the stay-away audiences?) and I spent several months squatting in a musty, leaking, and subsiding house that leaned scarily to the west, just north of the freeway, and seemed infested by cats even less toilet-trained than Daisy. But here's why I remember this incident when the names of all my grade school teachers and most of my early working colleagues are long fried. Poor confused Daisy's attempt to combine micturition with affection, or maybe artistic criticism, reminds me precisely of my own dealings with Europa. She didn't quite dock my balls when she was elevated to the station of Queen of the dead and godwhore *du jour*, but the effect was similar.

Did Daisy find a more winning path to Barney's heart once I was out of the picture, and my noises with me? Certainly I never found such a path back into Europa's, not really. Which is why I did what I did, and suffered the punishment everyone found meet and proper, especially the machines of loving grace, why I spent nearly a century growing old and foul while everyone around me cavorted like kittens endlessly renewed. Until (to gender-twist the "kitty equals me, not my wife" metaphor completely around and upside down) the day Europa escaped out a side window, and the authorities needed me to find her before she broke the universe asunder and piddled in the splinters.

Listen, while I talk on against time.

As above, the ancient alchemists held, so below. In the place of infinite corridors, dried indoor pools now and then awash in sand and maybe fishes' bones, carved hieroglyphs in unknown and unknowable tongues (or, perhaps, the speaking gestures before utterance stabilized into *langue*), only two things were singular, unbreachable: the universe entire, above; Asterion, the house, below.

"Your wife, the Goddess of the dead and unrealized, wishes to multiply the worlds and scatter the probabilities," my companion told me. It was the same message given to me by the machines of loving grace. The same implied charge: Go, find her out in her heartland, stay her hand if you can.

My feet were getting damned tired. I mean, I hadn't been out of the tank in years. Daylight was likely fading into night outside the Asterion's first door by now, and the turtle would surely have drawn back his leather head, blinking his great eyes at the going down of the Sun, and settled into a careful pit of sand of his own, safely distant from the hushing sea and the tossing asphodels.

"Let's take a break," I said. "What's a guy got to do to get a drink around here?" The machines had offered, but that was hours ago.

"We were thoughtless. Here, sir," and I was offered a steaming mug of rich Ethiopian coffee from a pot on a salver piled with bagels, lox, cream cheese, slices of ripe, firm tomato. I sat on the floor, back against a pillar embossed with fleeing foxes, russet-jacketed hunters (human) astride great leaping hunters (equine), dragons a-wing overhead, an arboreal snake or two. The coffee was excellent, of course; I slurped it down, smacking my lips, and munched on supper. My companion handed me a crisp linen napkin delicately embroidered; I wiped my lips, blew my nose on it, and dropped it on the floor. It would drift back into Types and memory soon enough.

"I needed that. Thank you." I rose, dusted my breeches, pissed against one wall, and checked my orientation. "Straight on 'til morning."

After a time, a tall, well-built fellow turned from a branching corridor into ours, caught sight of us, raised an eyebrow. He smiled, then.

"Greeting, Asterion."

"Shit, Man, you know I don't hold with that nonsense." I shook my head in exasperation, went to him with arms outstretched, hugged my eldest son. My eyes teared up at our embrace. I really was stranded halfway into old man's sentimentality. Radamanthus held me at arms' length, finally, frowning at my appearance.

"You're looking for Mother."

"Yes. Know where she's hanging out this season?"

"Well, you know, Dad. She might be summering in Crete." We both laughed at that. The blue leaping dolphins, the bull-leaping topless maidens, the flushing toilets *avant la lettre*. I wiped my eyes on the back of my sun-spotted right hand. "I'd be pleased to accompany you," he said. "Hey, you're dusty—this place really does need better cleaning surface. What you want is a pit stop. I'll call the boys."

Of course, Types and Tokens being what they are in the place of infinite corridors,

the hot bath I found myself soaking in ten minutes later was an exact duplicate of the Queen's light-drenched Megaron in Knossos, gold fittings restored and gorgeous murals touched up. I floated blissfully, muscles easing. The ache in my half-grown teeth fell away, and the ocean hush of running water was wind blowing across a meadow of faintly scented blooms. What woke me was a shout.

"Papa!"

I blinked water droplets from my eyes, paddled to the pool's edge. "Minos! I might have guessed, from the fittings."

"Oh, well, yes. We get trapped in these games, you know. Daddy, it's lovely to see you, but I have to confess that you've been in better shape. They let you out early?"

Min and Man stood attendance as I stomped up sea-shell steps and found a towel to wrap myself away from their innocent gaze. Noah, indeed. I whistled a discordant note or three between my teeth. "Yeah. Affairs of state. State vector, that is." My mostly bald head was almost dry already as I dabbed. "Where's the scamp?"

"Here, Father." His voice boomed, like an angel standing in the sun. Sarpedon was fated for a grim end, if they chose to run this myth game to its end—arguing murderously over a doe-eyed boy, for Christ's sake!—but surely they had more sense than that, sons of my body. Look where Europa and I had got, playing fast and loose with the underworld and the above-. "Rumors reach us of a tussle in the quantum playground," my youngest son said. "She's feeling fertile again, eh?"

I cuffed his shaggy head. "Show some respect for your dam, lad. But yes," I said with some chagrin, dressing again in the Hamletish garments gifted me by the machines of loving grace; no Danish sword at my belt, though, no Glock 22 under my armpit, no throwing knives secreted on bicep or calf, no pepper-spray canister in my back pocket, for that matter, "it sometimes feels like being married to a queen bee."

My parents, pious idiots, all but rent their garments when I wed Europa. I'm pretty sure my father would have liked to see me dead, if it weren't for his damned stiff-necked ethics. She wasn't Jewish, she wasn't subservient, she held no objection to dining on the flesh of a kid seethed in its mother's milk (it was my mother's blood that seethed!), and her idées fixes were even older and more preposterous than theirs. Europa was convinced that she had Been Here Before.

"I'm studying Phoenician," she told me over spanakopitas and stuffed vine leaves at Demo's, on our first date. Her lip sore had healed; it had taken some wooing to get her this far. We sat outside under a Cinzano shade imbibing the peak oil traffic fumes from North St. Mary's, and quaffed retsina, the whole Greek nine yards, or at least as close as you could get within walking distance.

"Charming! Uh, may I ask why?"

"They're my ancestors."

"You're shitting me," I said. "Say something in Phoenician."

"Listen, know-it-all, could you tell if I got the vowels wrong?"

"So it has vowels? Already they're ahead of Hebrew on points."

"Hebrew has vowels." Some spinach had stuck in her front teeth; I dared her bite to reach and snare it free.

"Of course it does, but for the longest time they weren't written down. Worse than Srbijan. Grzny. Crveni krst." I shuddered; how many Jews had died there in the concentration camp, and Romany, too, and communists for that matter? But I didn't want seriousness, let alone ancient griefs. "Worse than Superman's enemy from the fifth dimension."

"Mr. Mxyzptlk," Europa said, nodding.

Maybe that was the second moment I fell in love with her. The first was when she'd broken my nose.

"Punic derived from my people's language," she said. "It influenced yours, as well. Belial, for example."

"A demon, right?"

"You're not really interested."

I leaned across our rickety table and took her by the shoulders (bare in her summer top, sunburned, plump), kissed her mouth. "Of course I am. If you are."

But she was serious, taking a distance course at the Catholic University of America, of all noble institutions of learning, in Chicago. Wonders of the early internet. Her real interest would have scandalized her instructors.

"The Phoenicians were those who survived the great catastrophe. There's not much known about my true people."

I smiled. "The hunter-gatherers of the Serengeti?"

Europa shook her head, and sun-coins danced.

"The Sun Kings of Mu."

I knew then, with a racing excitement, that she was completely nuts. What I didn't know, yet, was that I would stitch her delusions, in a wholesale splicing of myth, legend and grotesque fraudulent invention, into the broadcloth of the real worlds. My bad.

"Moo?" I said in disbelief. "Moo?"

"I'm tired of walking. It's a pity they never put a rapid transit system in here."

The boys strode beside me, squabbling in a manly sort of way. Sons of the ancient Glorious they might be, but at least their struggles for elevation had not yet reached the hurling-thunderbolts stage. Minos gave Man a buffet to the shoulder, and told me, "I can whistle up some fine Arabians for us, an it please you, sire."

I gritted my small gappy teeth. "Something with a bit more horsepower than a horse. Hmm. Can you lay your hands on a thoat?"

The brothers shared a glance.

"Mars," I said. "Edgar Rice Burroughs. Ancient romancer. Oh, never mind." But they'd done their due diligence, and I heard a vast snorting and snoring at my back, turned in the corridor into a gust of rotty vegetable breath. Two of the great and terrifying mounts waited nervously, vast and trunkless slate-hued elephants with eight yellow legs caparisoned in jeweled harness. One uttered a deep squealing cry that rang in my ears. "Good lads! Help me up, Sar." I had never seen a thoat before, outside the illustrated pages of an old book, but I was reassured by the memory that they are herbivorous. Did the thoats know that? Surely these were broken to the saddle, and to battle. Sarpedon gave me a leg up—the brutes are lofty, double a man's height, near enough—and followed with a bound to sit behind me. Minos and Radamanthus climbed aboard their own behemoth, and we ran side by side along the suddenly wide-enough corridor, scattering the dead and improbable. "Yah-hoo!" I shouted, and wished I had my hat to wave. "To-wit, to-woo! Tally-ho!"

"He hasn't been out much lately," I heard Min shout to Man. I didn't mind their laughter. It was true enough. I closed my eyes, fingers clinging to my thoat's pulsing neck, and sought direction, vector. The Wardrobe lay ahead, and Europa on its far side, which since the Wardrobe has infinite variety, like the infinite corridors of the Asterion that cradles it, isn't saying a lot, cartographically speaking. I needed to depend on my nose. I sniffed. I tasted the gray air. Mostly I got heaving thoat breath, but there was that hint of thread—

"Starboard, gentlemen," I cried, and we went that way. The corridor darkened to a purple dusk. Ahead, like a cheery burger joint truck stop on a lonely highway, the Wardrobe stood brightly lit, beckoned me. I hove to, flung forward into the throat's plated integument as it screeched to a halt. "End of the line! All out!"

Part hyper excitement, part sheer funk. I hadn't seen my wife the Queen of the

dead in a good many years, and the prospect was not altogether encouraging. Still, you know what a man's gotta do.

"I would lief attend you, sire," Man said, every inch the officer and gentleman. How did I come to have kids like this? The other boys chirped up with their own expressions of filial zeal. I shooed them away, but I confess I had moisture in my eye. Like I said, sentimental as an old man, which I mostly still was.

"The machines asked me to do it alone, and they have a better understanding than I do of the way the cosmos wags. Really, you've been a tremendous help, it's been too long, but I'd better get a wiggle on before I lose my nerve. Guys, a pleasure," and I turned with a cheery wave, back itching, wishing I *did* have a sword or an S&W .50 Magnum (although I'd never studied foil, let alone saber, and fired only an airgun when I was a kid, potshots at rabbits and squirrels outside my small ratty boyhood town where Jews were not especially welcome), and pushed open the swing doors of the Wardrobe's wormhole.

It swallowed me down, and I left my adopted sons to fend for themselves, as always.

And flung me out in the main drag of the crystalline capital of Mu (Karath, if that was really her ancient name), behind her cyclopean crimson walls and moats, just as the run-up to Richter 10 catastrophe started shaking the towers and campaniles into fearsome shards tumbling in a mess of shredded human flesh. Screaming you couldn't hear through the boom. Blood you couldn't avoid seeing, until the rising tsunami of dust and grit soaked it into blasphemous mud, and then the tsunami of Oceanus washed it into the depths.

I didn't believe it, either, but the nightmares of a goddess have a terrifying palpability. And this one was grounded, after all, so deeply grounded, in an even more terrifying catastrophe of Mother Earth.

In case you haven't glossed it yet, a Richter 10 quake can tear a continent or tectonic plate in half. These shock measures are logarithmic, so a Richter 11 hadn't happened to the Earth (the earths accessible through the wormhole, anyway) since that stray star pebble the size of Mars slammed into primordial Gaia four billion years ago, give or take, and blew the baked outer skin the hell off, which settled down later, on orbit, as the Moon, and brought the Glorious with it to the core. Trust me, 10 is

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as bad as you want to see, and I'd rather see than be in one. But I was, because I suppose Europa was having a maudlin fit of guilt, again, wondering how she could fix things. But if so she was whistling Dixie, because Mu was another country, and they did things differently there.

I was the one who'd awakened Mu, or some roaring, stinking simulacrum, from her millennial drowning deeps. There's my own guilt, although that crime is not the one they charged me with. I've never denied it, which is one reason I went into protraction and Redemption without too much whining. It was my song, my opera, my out-do-Wagner *Götterdämmerung*. Here's my recollection, which might well differ from your glossed authorized edition:

"Honey, it's just a myth," I told Europa one Saturday afternoon, over nachos—shredded, melting cheddar, refried beans and jalapeno peppers on corn tortilla chips, dipping up salsa and luscious seasonal guacamole—washed down by Cokes. Europa wasn't her name back then, obviously, not her librarian, Social Security number name. We'd moved in together by then; I was teaching Setharean exomusicology at the city college in between running band practice. "A lovely myth, sure. Lemuria, Mu, Poseidonis, Atlantis." I'd done some Googling. Scott-Elliott, Madame Blavatsky, Donnelly, Lovecraft, Howard, Cayce . . . "Tyre and Sidon, I'll grant you those Phoenicians. Maybe they are your ancestors. But Karath of Mu? I don't think so." My cheese-sticky hands might have hovered protectively before my face as I said it, but I pretended I was brushing away a mosquito.

"Colonel Churchward listed their sacred symbols, their alphabet," she told me with her blank, intoxicating stare. Autistic and Asperger people, I'd heard, usually didn't like to meet people's eyes, so that might not be her formal diagnosis. My pulse accelerated, and my horniness. Gnosis was Europa's mystery, you can hold the *diagnosis*, doctor, ha ha. "Look at them. Here."

She handed me an old book, pages of runes. Punic runes, maybe.

"You can read this?"

She shook her head sadly at my disbelief, began uttering the strangest, most unsettling stream of glossalalia I'd ever heard. Had she picked up some of it from my parents' Hebrew prayers? We'd gone to temple more than once, dutiful, or pretending—or perhaps, I wondered, she was tapping into something truly archaic, a pre-articulate bump in the pre-cortex. (I didn't know about the Glorious, then, none of us did.) Still, I noticed the way her eyes tracked across and down the page, right to left and back, but now left to right, and again. Boustroph'edon writing, they called that—an endless string of utterance scored on the page like the plowing back and forth of a bullock, an ox, in a field. I surreptitiously toggled my pocket recorder (doesn't every composer carry one, putting it aside only for the bath?), and tried to match the symbols (surely bogus) to the breathy yet guttural sounds hushing from her lips.

By god, I can use this, I told myself.

I can use this!

I chose an eleven-tone tuning, exactly to challenge my audience (if any), to evoke the disruption and clash of civilizations that seemed to me captured in this archaic image: the smashed city, its towers ablaze, broken, drowned, the very continent—of which the city was the throbbing heart—cracked and sunk. You want a lullaby for that? My father did, it seemed. I stupidly told them all my plan over festive Shulchan Orekh, the family dinner at Pesach, jittery with excitement at my new idea, no sense of self-protection, no sense at all.

"Is this why we sent you to school? So you could assault the ears of decent people?" I'd played them a tinny fragment of the *Karath Submerged* recitative, using my cell-phone audio linked to the big iron at home.

"Dad, for god's sake!" Talk about bitter herbs.

"Don't take the Lord's name," my mother twittered.

"Oh fuck." Not quite under my breath. On the other side of the table, my wife sat mute, eyes fixed on my father's forehead, it looked like. "I'm doing okay."

"With her salary at the library," my mother said.

"People want *tunes*," my father explained. "They don't wish to hear this atrocious noise. Well, the schwartzes, maybe. Those filthy rap songs all day long." And out of his prim mouth, impelled by disgust and rage, ratatatted a catalogue of this lowlife cussing.

We all went still and stiff and incredulous. My father was then fifty-four, not old, not at all old, but he had caught it on his car radio, I suppose, gangsta rap. Or just couldn't block it from his ears as he walked the dog while the cars rolled by, windows down, drivers slouched on the floor, foulness radiated at industrial volume, boom boom, bang bang. Even I found it got on my nerves eventually. My mother had run into the kitchen to fetch Tishpishti diamonds or Mile High chocolate cake or almond streusel topped apple cobbler or something, sound American-Jewish cuisine, not a single obscenity or cop murder on the bill of fare.

I said, "Daddy, you want me to churn out Hallmark melodic greeting cards?"

"People pay good money for them, at least," he said, shaken by his own frankness. "Don't mock what people want. I don't understand you, boy, you call this stuff music, you marry a—" He caught himself barely in time.

For once I chose not to rise to the *shiksa* bait. "People learn to love new things, Daddy. Look, let me convince you."

"Ha. That will never happen."

"We can try. You have to know that the music we hear from the radio, Bach and Beethoven and Irving Berlin and the Beach Boys, it's all made out of notes—"

"You think I'm a fool? What else would it be made of?"

"—notes where the sounds are divided up into twelve acoustically equal portions." I found the large match box he'd used to light the Passover candles, emptied out into a pile, counted twelve all in a row, red-headed soldiers for art. "That's what you hear all day long, from that Chopin CD I gave you for your birthday all the way to the hip-hop zombies, okay?"

With an eyebrow raised, he gave a small grin to hear his *bêtes noires* named.

"But look—" I laid out another twelve, one for one, then took back a single match, tossed it aside, shuffled the remainder to a new order, each match now a little farther distant from its neighbor on either side. "Eleven-tone tuning."

"But why?" He sounded genuinely anguished. "Do you saw off one leg from your chair and wait to fall over on your tuches?"

"There were three-legged stools before anyone invented a four-legged chair," Europa said.

My father, I swear, rolled his eyes. I said hastily, "See, in your customary music there's both consonant and dissonant intervals. But with eleven-tone, *all* the intervals are dissonant, especially the thirds and fifths, which is very unexpected." I held out the palm of my hand. "So instead of *harmony*, you have *melody*. And that's the real engine of music. Besides, this oratorio is about the destruction of an ancient mythic nation—"

"A real nation," Europa said.

"Whatever. So I have to undercut your complacency as a listener, okay, I have to stick prongs inside your comfortable ears."

"Just leave my damned ears alone," my father said. "I'm very happy with my ears the way they are. Gertrude, where's that damned dessert?"

The Wardrobe always takes you straight to the right place, if you're the right person.
Flowers of Asphodel

son to go there. The Glorious that fathered my stepsons designed it that way. I walked up the winding path to the old farm house, plucking a posy of yellow asphodels (what else?), and found Europa rocking absently in a rope-and-canvas hammock on the porch, out of the direct sunlight. Not that it was especially bright, nor ever was, here. Her broad pale brown face had its own glow. Moo moo, the great Bull-god's lover, Mu the lost world, Moon the face, it's all melody.

"Hello, wife," I said.

"Hmm." She regarded me with unnerving blank directness. "You've let yourself go."

I did the barking laugh that fits so well with dissonant tuning. She did not look like an old woman. Who did, these days? "My punishment for letting you go, my dear."

"For dismissing me into this place."

"Oh, don't." I saw an old bentwood chair in the far corner, dragged it back, sat beside her. We did not touch. I suppose you'd have to consider ours a companionate marriage at best. "I just saw the boys. They've done good. Well, what can you expect, sons of the Glorious and all."

Europa sighed and looked away. "They are the children of your body, Isaac."

"Yeah." I whistled a few notes of *The Crushed Lotus* aria, watched her cramp up her lips. "Well, anyway, babe, I hear you're planning some renovations. I bear a message from the machines: they'd prefer you to leave well enough alone."

The sky went totally black for an instant. I saw everything in solarized reverse, Europa's eyes ultraviolet. We sat on top of a huge rust-red rock, and all about stretched arid rusted desert under a sky harshly, radiantly blue. Africa? Arizona? Mars? I still had air to breathe, anyway.

"I found a way to set them free," she said then, not apologizing, not explaining. "All the dead. All those who perished in the fall of Mu and her daughters. The dead of all the stupid wars. All the dead who died anyway, of age or disease or broken hearts."

"Heaven on a stick, eh?" I was abruptly furious. "Don't talk to me about broken hearts, you mad bitch. You and I know the truth. You weren't pushed and you didn't fall. You walked out and left me with the kids."

"Oh, boo hoo," she said in a voice I could hardly hear. "I had things to do, places to go. What, I was meant to hang about with you and your dreary damned family until I died of boredom and screeching noise?"

I felt a small shudder pass through my chest, my caught breath, and I let it go, let it all go.

"Of course not. I'm not a fool. It's not every day a girl has a Glorious tapping at her parlor door, offering to bear her off to the underworld." I straightened in the chair, and it creaked under my weight. "Are you determined to do this thing?"

"Yes."

"Is it dangerous? To us all?"

"Risk provides the sauce. Look—" And she grabbed up a straw broom leaning against the paint-peeled siding, stripped it down to dust and made two, one in each hand. They failed to cavort like the brooms of the Sorcerer's Apprentice, which was, I thought in my mordant terror, a bit of a letdown.

"Handy. A free broom in every storage cabinet," I said. "How banal you are."

"I will make worlds and world beyond worlds," Europa told me, rocking contentedly in her hammock, dropping the twins to clatter on the floorboards, "and fling them like bright jewels into the infinite. Galaxies like grains of sand, universes like dust caught in a beam of sunlight—" Glittering, then, the brooms disintegrated into a cascade of eye-dazzling sparks that tore upward in a gout of radiance, cold fire.

"For the fucking bugs," I said, and stood up, didn't kick over the chair or rub my shocked eyes, and walked away from her, still holding the asphodel posy. "For your damned creepy Bug King."

She did not dispute my words. She did not call me back. I knew there was no way I might induce her to promise to stay her hand. Probably I'd known from the outset.

Here's a handy simile, free of charge. Engrave it in your brain or accessory; don't leave home without it.

In cartoons, lightning bolts always are shown as a jagged spear thrust from lowering clouds, sharp tip slamming at a sixth of the speed of light, or thereabouts, toward the ground. It doesn't work that way, quite. You've probably spotted my figure of speech already, right? You smart, smart machines. You keen kids.

The potential tension grows and grows between negatively charged cloud mass high above and positively charged ground ions swarming below. Trickles of current stepladder their hungry way down toward the monstrous globe of the earth—and hot, powerful positive streamers are flung upward to meet their embrace. They fuse; a gout of luminous charge tears from the soil to the sky. The channel boils. Torn air is flung aside, and thunder rolls and booms its godlike voice.

That's how it was when I awakened the Glorious with my feeble, jagged song.

The night of the premiere was peak allergy season in central Texas. Pecans bloomed outside every window. Juniper pollen blew in every gust. A dozen or a hundred fruits of the soil scattered their vicious grains on the muggy air. I sneezed; my eyes ran, then clogged up with stinging, itching gloop, supernaturally resistant to antihistamines. Like a bag of overpriced rice dunked in water, the meat of my sinuses swelled and beat a tattoo against my brain. The skin eroded in dry white flakes from between my eyebrows, at my hairline, beside my nostrils. I was a mess. I wanted to stay home. I wanted to lie down and die.

Obviously Europa wouldn't let me.

It wasn't as though I had to don black tie and get my hair cut. Nobody on Yahweh's wide earth had the faintest interest in opening their opera chamber to a performance of an ear-grating avant-garde oratorio (there were jealous mutterings that it was derriere-garde, like the exhausted tricks of Schönberg's twelve-tone row) about the sinking of a mid-Pacific continent that never existed. I'd've had better luck, maybe, in San Francisco or Sydney, but who could afford it? My dumpster diver pal Jules Groznick and a pinch-hit ensemble of kids and blue-haired ladies clutched their ill-rehearsed scores in the sound-proofed garage owned by the Dewey Street dentist father of the president of the College Choristers and sang their hearts out into a decent Roland multi-track home studio digital recorder. Mu sank; blood flowed; the towers toppled, earth opened, sea plunged and gulped. Simultaneously, banally, the performance mix-down flowed straight to YouTube and any iPods careless or eccentric enough to be logged on and tuned in. My score went up to heaven in electronic packets swapped and mixed-and-matched into satellites around the globe, and trickled down again, and alerted the Glorious in its slow, awful billion-year meditations.

If I was sneezing, you can imagine the convulsions in the bowels of the earth as a billion tons of archaeobacteria entrained their distributed intelligence and its entangled, resonant presence in all the microorganisms of all the biosphere's warm bodies, and noticed me and Europa.

You really mustn't blame me for the loss of Indonesia and New Guinea and Hawaii, and like that.

Talk about an allergy reaction.

So I became Asterion, under the awakened direction of the ancient Bugs carried into the core of the Earth by the small planet that blew the Moon off from the world's crust, and was sent by them to the Navel of the Worlds, the omphalos island that

joins all the infinite realities and unrealities; and my neuroatypical wife locked herself gratefully into communion with the mass consciousness that had smashed into proto-Earth four billion years ago then settled as the iron core in the middle of the roiling planet, bearing its Glorious life from Somewhere Else, who knows where, and she was thus Europa, myth goddess of the underworld, mother, eventually, of our three god-engendered sons. I stood back in throttled rage and secret pride, until at last my off-key Machiavellian calculations persuaded her to decamp, light out for the transfinite territories; rather reign in Tartarus than serve blessed exponentiating Moore's Law machines in post-industrial, near-Singularity heaven, reign there, yes, as the Great Mother, over the dead and the infinitely possible, and—

But you know all this, dear cursed soulreaders. Of course you do. So enough of that. And for fuck's sake, call me Isaac, okay?

I'd been back from the Wardrobe three days (risen, if you like, from the dead, good Judaic heresiarch that I am) when the machines of loving grace came to me in my chambers above Ciudad de México. I chafed in frustration, rubbing nanomedicinal unguents into my aching unreplenished limbs. A blustery storm was blowing in across the Bahia de Campeche from the east and south, turbulent night eddies in the air skin of the world shoved about in unaccustomed vectors by the raw new mountains in the center of the Atlantic. Auroras flailed pink and baby-blue silk scarves, some greeny pale, asphodels of light, as plasmas and magnetic ropes from the Sun whipped up the ionosphere still unsettled after the best part of a century. Soon dark clouds heavy with moisture would block their dance, and a hard rain would drum across the city.

Somewhere, a cat wailed.

"I delivered your message," I said. "My wife was not impressed. She will not return. She will not ditch her plans. I believe she yields to higher authority—or lower, if we're to be literal. Okay, now shoot the messenger." I struck a martyr's pose, arms outstretched, head thrown heroically to one side.

"There is no fate here to tempt, Isaac," they told me. Through my flesh and bone, a trillion commensal brainless bacteria and viral particles thrilled to the long hums and waves of the mind of the world, the deeps beneath us, the cavernous cities and continents of ancient life that dreamed its being in our scurrying short lives. The machines, I told myself, were just the latest incarnation of this investiture, this infestation. But is the soul an infection of the tissues? Is spirit and awareness, and music melodic and harmonic alike, nothing better than a plague supervening on our brute and yearning selves? Beats me; I'm an annoying know-it-all, not a philosopher.

"Fix me, or leave me in peace," I told them, nettled at my own organic restrictions and bounds. "I never asked for any of this."

"No more you did," a machine told me, and its voice was kindly. "Yet here you are, and here it is. Get some sleep. We shall speak again in the morning."

I called up a woman I'd known before they finally let my aging bod into the tank for renovation, then ripped it out again untimely. No need to frighten her with my scarecrow impersonation, so I left the visual feeds dark. I could see her, though, not looking too harried, sipping coffee in Paris or Bucharest, hair piled and gleaming in what I supposed to be the newest fashion. I felt a pang, I did.

"Hey, Aahba, Isaac Hersch here. Sorry about the blackout."

There was the smallest lag, on top of the speed of light thing. "Oh, hi, honey. It's been a time. You're not spelunking in Carlsbad Caverns, by any chance?"

"Been away, out of touch with everything. I switching the camera off, didn't want to frighten the horses." She didn't get the reference, either, never mind. Aahba is an extrasolar exoplanetologist, and spends her time searching for signals of other Glorious in other worlds within viewing distance. Her night has a thousand Eyes. "Found any offworld pals yet?"

Hesitation. Coffee cup clattered faintly as she set it in its saucer. "Uh, you asking as Isaac—or Asterion?"

"Isaac, always, with you." We'd had some sweet encounters. Reykjavik? Lanzhou? There was one astrobiology conference . . . (You can look it up.) I assume she adopted her name as an emblem of her profession, as she didn't look especially Indian; it means "Shine" in Sanskrit. (You can look it up.) "So the world seems to be doing okay, with the machines in charge. But I suspect there are some big changes coming."

Laughter at that, coffee-spitting nervous laughter. "You and your wife should probably stop with those changes already."

That was astute, but maybe self-evident, I don't know, I'm too close to it all. Do people spend their days looking anxiously over their shoulders for the shadow of Europa, of Radamanthus, Minos, Sarpedon? Maybe so.

"It's probably under news embargo, but then the machines assure me that nothing these days is forbidden, so hey. Yeah, she's tearing up the pavement again and making some renovations."

"Look, I'm— It's lovely to hear from you again, Isaac, but I'm married these days, he's an ER doctor from . . ." She really was flustered, and trailed off. "So I can't see you. I do hope you're— Oh, hell." And she broke the connection.

I sat there staring at my toes for quite a while, bleak. The gastritis was gnawing down below my heart, or maybe it was just my lonely heart, again. I rose, went out to the platform, looked at the scummy surface of the world. Europa couldn't do any worse than we'd all managed so far, we and the bacterial, vegetable Mind that moved through us in glacial tsunamis. I threw back my head and howled. Far below, on the street, a surprised dog howled back, his throaty call rising faintly in the caverns of glass and steel.

"Just put me back in the tank and let me get young in peace," I said.

"Very well, Isaac," the loving machines said, and wrapped me up, and popped me away into the tank. As my awareness drained down the plughole, I fancied I heard your prying questions, soulreaders, soulsuckers, so I've answered them as best I can, as I ebb away in these last microseconds of accelerated memory. Is that thrumming and tearing I hear in the bowels of reality just the anesthesia locking down, or has Europa started her multiplication lessons?

I think that's it. She'll be ripping us up and making every kind of New Atlantis there is. Maybe I'll see you on the other side. Maybe you'll just let me sleep through it. Maybe Europa will come to me again, in our other world, a world just for us and the kids.

Maybe I'll love her, then, and she me.

What power has forgiveness but love? ○

—To the memory of Roger Zelazny
and William Carlos Williams

FOR YE, OF VERY LITTLE FAITH . . .

. . . and yet, in whom, there lingers spark—

there is the Nano Testament

that tells us all of Noah's Quark,

that Noah builded Planck by Planck

(and into which his zoo fits),

that was measured out 200,

long, by 40 qbits.

—W. Gregory Stewart



EROSION

Ian Creasey

Two of Ian Creasey's previous stories for *Asimov's*, "This Is How It Feels" and "The Hastillan Weed," have recently been podcasted and are available as audio downloads at *Escape Pod*. Another *Asimov's* story, "The Edge of the Map," has just been reprinted in Mike Ashley's anthology *The Mammoth Book of Mindblowing SF*. The author tells us he lives in Yorkshire, England, at a safe distance from the coast.

Let me tell you about my last week on Earth....

Before those final days, I'd already said my farewells. My family gave me their blessing: my grandfather, who came to England from Jamaica as a young man, understood why I signed up for the colony program. He warned me that a new world, however enticing, would have its own frustrations. We both knew I didn't need the warning, but he wanted to pass on what he'd learned in life, and I wanted to hear it. I still remember the clasp of his fingers on my new skin; I can replay the exo-skin's sensory log whenever I wish.

My girlfriend was less forgiving. She accused me of cowardice, of running away. I replied that when your house is on fire, running away is the sensible thing to do. The Earth is burning up, and so we set forth to find a new home elsewhere. She said—she shouted—that when our house is on fire, we should stay and fight the flames. She wanted to help the firefighters. I respected her for that, and I didn't try to persuade her to come with me. That only made her all the more angry.

The sea will douse the land, in time, but it rises slowly. Most of the coastline still resembled the old maps. I'd decided that I would spend my last few days walking along the coast, partly to say goodbye to Earth, and partly to settle into my fresh skin and hone my augments. I'd tested it all in the post-op suite, of course, and in the colony simulator, but I wanted to practice in a natural setting. Reality throws up challenges that a simulator would never devise.

And so I traveled north. People stared at me on the train. I'm accustomed to that—when they see a freakishly tall black man, even the British overcome their famed (and largely mythical) reserve, and stare like scientists at a new specimen. The stares had become more hostile in recent years, as waves of African refugees fled their burning lands. I was born in Newcastle, like my parents, but that isn't written on my face. When I spoke, people smiled to hear a black guy with a Geordie accent, and their hostility melted.

Now I was no longer black, but people still stared. My grey exo-skin, formed of myriad tiny nodules, was iridescent as a butterfly's wings. I'd been told I could create patterns on it, like a cuttlefish, but I hadn't yet learned the fine control required. There'd be plenty of shipboard time after departure for such sedentary trifles. I

wanted to be active, to run and jump and swim, and test all the augments in the wild outdoors, under the winter sky.

Scarborough is, or was, a town on two levels. The old North Bay and South Bay beaches had long since drowned, but up on the cliffs the shops and quaint houses and the ruined castle stood firm. I hurried out of town and soon reached the coastal path—or rather, the latest incarnation of the coastal path, each a little further inland than the last. The Yorkshire coast had always been nibbled by erosion, even in more tranquil times. Now the process was accelerating. The rising sea level gouged its own scars from higher tides, and the warmer globe stirred up fiercer storms that lashed the cliffs and tore them down. Unstable slopes of clay alternated with fresh rock, exposed for the first time in millennia. Piles of jagged rubble shifted restlessly, the new stones not yet worn down into rounded pebbles.

After leaving the last house behind, I stopped to take off my shirt, jeans, and shoes. I'd only worn them until now as a concession to blending in with the naturals (as we called the unaugmented). I hid the clothes under some gorse, for collection on my return. When naked, I stretched my arms wide, embracing the world and its weather and everything the future could throw at me.

The air was calm yet oppressive, in a brooding sulk between stormy tantrums. Grey clouds lay heavy on the sky, like celestial loft insulation. My augmented eyes detected polarized light from the sun behind the clouds, beyond the castle standing starkly on its promontory. I tried to remember why I could see polarized light, and failed. Perhaps there was no reason, and the designers had simply installed the ability because they could. Like software, I suffered feature bloat. But when we arrived at our new planet, who could guess what hazards lay in store? One day, seeing polarized light might save my life.

I smelled the mud of the path, the salt of the waves, and a slight whiff of raw sewage. Experimentally, I filtered out the sewage, leaving a smell more like my memories from childhood walks. Then I returned to defaults. I didn't want to make a habit of ignoring reality and receiving only the sense impressions I found aesthetic.

Picking up speed, I marched beside the barbed wire fences that enclosed the farmers' shrinking fields. At this season the fields contained only stubble and weeds, the wheat long since harvested. Crows pecked desultorily at the sodden ground. I barged through patches of gorse; the sharp spines tickled my exo-skin, but did not harm it. With my botanist's eye, I noted all the inhabitants of the little cliff-edge habitat. Bracken and clover and thistles and horsetail—the names rattled through my head, an incantation of farewell. The starship's seedbanks included many species, on the precautionary principle. But initially we'd concentrate on growing food crops, aiming to breed strains that would flourish on the colony world. The other plants . . . this might be the last time I'd ever see them.

It was once said that the prospect of being hanged in the morning concentrated a man's mind wonderfully. Leaving Earth might be almost as drastic, and it had the same effect of making me feel euphorically alive. I registered every detail of the environment: the glistening spiders' webs in the dead bracken, the harsh calls of squabbling crows, the distant roar of the ever-present sea below. When I reached a gully with a storm-fed river at the bottom, I didn't bother following the path inland to a bridge; I charged down the slope, sliding on mud but keeping my balance, then splashed through the water and up the other side.

I found myself on a headland, crunching along a graveled path. An ancient notice-board asked me to clean up after my dog. Ahead lay a row of benches, on the seaward side of the path, much closer to the cliff edge than perhaps they once had been. They all bore commemorative plaques, with lettering mostly faded or rubbed away. I came upon a legible one that read:

In memory of Katriona Grady

2021–2098

She Loved This Coast

Grass had grown up through the slats of the bench, and the wood had weathered to a mottled beige. I brushed aside the detritus of twigs and hawthorn berries, then smiled at myself for the outdated gesture. I wore no clothes to be dirtied, and my exo-skin could hardly be harmed by a few spiky twigs. In time I would abandon the foibles of a fragile human body, and stride confidently into any environment.

I sat, and looked out to sea. The wind whipped the waves into white froth, urging them to the coast. Gulls scudded on the breeze, their cries as jagged as the rocks they nested on. A childhood memory shot through me—eating chips on the seafront, a gull swooping to snatch a morsel. Within me swelled an emotion I couldn't name.

After a moment I became aware of someone sitting next to me. Yet the bench hadn't creaked under any additional weight. A hologram, then. When I turned to look, I saw the characteristic bright edges of a cheap hologram from the previous century.

"Hello, I'm Katriona. Would you like to talk?" The question had a rote quality, and I guessed that all visitors were greeted the same way; a negative answer would dismiss the hologram so that people could sit in peace. But I had several days of solitude ahead of me, and I didn't mind pausing for a while. It seemed appropriate that my last conversation on a dying world would be with a dead person.

"Pleased to meet you," I said. "I'm Winston."

The hologram showed a middle-aged white woman, her hair as grey as riverbed stones, her clothes a tasteful expanse of soft-toned lavender skirt and low-heeled expensive shoes. I wondered if she'd chosen this conventional self-effacing look, or if some memorial designer had imposed a template projecting the dead as aged and faded, not upstaging the living. Perhaps she'd have preferred to be depicted as young and wild and beautiful, as she'd no doubt once been—or would like to have been.

"It's a cold day to be wandering around starkers," she said, smiling.

I had forgotten I wore no clothes. I gave her a brief account of my augmentations. "I'm going to the stars!" I said, the excitement of it suddenly bursting out.

"What, all of them? Do they make copies of you, and send you all across the sky?"

"No, it's not like that." However, the suggestion caused me a moment of disorientation. I had walked into the hospital on my old human feet, been anesthetized, then—quite some time later—had walked out in shiny new augmented form. Did only one of me leave, or had others emerged elsewhere, discarded for defects or optimized for different missions? *Don't be silly*, I told myself. *It's only an exo-skin. The same heart still beats underneath.* That heart, along with the rest of me, had yesterday passed the final pre-departure medical checks.

"We go to one planet first," I said, "which will be challenge enough. But later—who knows?" No one had any idea what the lifespan of an augmented human might prove to be; since all the mechanical components could be upgraded, the limit would be reached by any biological parts that couldn't be replaced. "It does depend on discovering other planets worth visiting. There are many worlds out there, but only a few even barely habitable."

I described our destination world, hugging a red dwarf sun, its elliptical orbit creating temperature swings, fierce weather and huge tides. "The colonists are a mixed bunch: naturals who'll mostly have to stay back at base; then the augmented, people like me who should be able to survive outside; and the gene-modders—they reckon they'll be best off in the long run, but it'll take them generations to get the gene-tweaks right." There'd already been tension between the groups, as we squabbled over the starship's finite cargo capacity, but I refrained from mentioning it. "I'm sorry—I've gone on long enough. Tell me about yourself. Did you live around here? Was this your favorite place?"

"Yorkshire lass born and bred, that's me," said Katriona's hologram. "Born in Whitby, spent a few years on a farm in Dentdale, but came back—*suck my flabby tits*—to the coast when I married my husband. He was a fisherman, God rest his soul. *Ar-sewip!* When he was away, I used to walk along the coast and watch the North Sea, imagining him out there on the waves."

My face must have showed my surprise.

"Is it happening again?" asked Katriona. "I was hacked a long time ago, I think. I don't remember very much since I died—I'm more of a recording than a simulation. I only have a little memory, enough for short-term interaction." She spoke in a bitter tone, as though resenting her limitations. "What more does a memorial bench need? Ah, I loved this coast, but that doesn't mean I wanted to sit here forever. . . . *Nose-picking tournament, prize for the biggest booger!*"

"Would you like me to take you away?" I asked. It would be easy enough to pry loose the chip. The encoded personality could perhaps be installed on the starship's computer with the other uploaded colonists, yet I sensed that Katriona wouldn't pass the entrance tests. She was obsolete, and the dead were awfully snobbish about the company they kept. I'd worked with them in the simulator, and I could envisage what they'd say. "Why, Winston, I know you mean well, but she's not the right sort for a mission like this. She has no relevant expertise. Her encoding is coarse, her algorithms are outdated, and she's absolutely riddled with parasitic memes."

Just imagining this response made me all the more determined to fight it. But Katriona saved me the necessity. "That's all right, dear. I'm too old and set in my ways to go to the stars. I just want to rejoin my husband, and one day I will." She stared out to sea again, and I had a sudden intuition of what had happened to her husband.

"I'm sorry for your loss," I said. "I take it he was never"—I groped for an appropriate word—"memorialized."

"There's a marker in the *fuckflaps* graveyard," she said, "but he was never recorded like me. Drowning's a quick death, but it's not something you plan for. And we never recovered the body, so it couldn't be done afterward. He's still down there somewhere. . . ."

It struck me that if Katriona's husband had been augmented, he need not have drowned. My limbs could tirelessly swim, and my exo-skin could filter oxygen from the water. As it would be tactless to proclaim my hardiness, I cast about for a neutral reply. "The North Sea was all land, once. Your ancestors hunted mammoths there, before the sea rose."

"And now the sea is rising again." She spoke with such finality that I knew our conversation was over.

"God speed you to your rest," I said. When I stood up, the hologram vanished.

I walked onward, and the rain began.

I relished the storm. It blew down from the northeast, with ice in its teeth. They call it the lazy wind, because it doesn't bother to go around you—it just goes straight through you.

The afternoon darkened, with winter twilight soon expiring. The rain thickened into hail, bouncing off me with an audible rattle. Cracks of thunder rang out, an ominous rumbling as though the raging sea had washed away the pillars of the sky, pulling the heavens down. Lightning flashed somewhere behind me.

I turned and looked along the coastal path, back to the necropolis of benches I had passed earlier. The holograms were all lit up. I wondered who would sit on the benches in this weather, until I realized that the lightning must have short-circuited the activation protocols.

The holograms were the only bright colors in a washed-out world of slate-grey

cloud and gun-dark sea. Images of men and women flickered on the benches, an audience for Nature's show. I saw Katriona standing at the top of the cliff, raising her arms as if calling down the storm. Other figures sat frozen like reproachful ghosts, tethered to their wooden anchors, waiting for the storm to fade. Did they relish the brief moment of pseudo-life? Did they talk among themselves? Or did they resent their evanescent existence, at the mercy of any hikers and hackers wandering by?

I felt I should not intrude. I returned to my trek, slogging on as the day eroded into night. My augmented eyes harvested stray photons from lights in distant houses and the occasional car gliding along inland roads. To my right, the sea throbbed with the pale glitter of bioluminescent pollution. The waves sounded loud in the darkness, their crashes like a secret heartbeat of the world.

The pounding rain churned the path into mud. My mouth curved into a fierce grin. Of course, conditions were nowhere near as intense as the extremes of the simulator. But this was *real*. The sight of all the dead people behind me, chained to their memorials, made me feel sharply alive. Each raindrop on my face was another instant to be cherished. I wanted the night never to end. I wanted to be both here and gone, to stand on the colony world under its red, red sun.

I hurried, as if I could stride across the stars and get there sooner. I trod on an old tree branch that proved to be soggy and rotten. My foot slid off the path. I lurched violently, skidding a few yards sideways and down, until I arrested my fall by grabbing onto a nearby rock. The muscles in my left arm sent pangs of protest at the sharp wrench. Carefully I swung myself round, my feet groping for toeholds. Soon I steadied myself. Hanging fifty feet above the sea, I must have only imagined that I felt spray whipping up from the waves. It must have been the rain, caught by the wind and sheeting from all angles.

The slip exhilarated me. I know that makes little sense, but I can only tell you how I felt.

But I couldn't cling there all night. I scrambled my way across the exposed crags, at first shuffling sideways by inches, then gaining confidence and swinging along, trusting my augmented muscles to keep me aloft.

My muscles gripped. My exo-skin held. The rock did not.

In mid-swing, I heard a *crack*. My anchoring left hand felt the rock shudder. Instinctively I scrabbled for another hold with my right hand. I grasped one, but nevertheless found myself falling. For a moment I didn't understand what was happening. Then, as the cliff-face crumbled with a noise like the tearing of a sky-sized newspaper, I realized that when the bottom gives way, the top must follow.

As I fell, still clinging to the falling rock, I was drenched by the splashback from the lower boulders hitting the sea below me. Time passed slowly, frame by frame, the scene changing gradually like an exhibition of cels from an animated movie. The hefty rock that I grasped was rotating as it fell. Soon I'd be underneath it. If I still clung on, I would be crushed when it landed.

I leapt free, aiming out to sea. If the cliff had been higher, I'd have had enough time to get clear. But very soon I hit the water, and so did the boulder behind me, and so too—it seemed—did half of the Yorkshire coast.

It sounded like a duel between a volcano and an earthquake. I flailed frantically, trying to swim away, not understanding why I made no progress. Only when I stopped thrashing around did I realize the problem.

My right foot was trapped underwater, somewhere within the pile of rocks that came down from the cliff. At the time, I'd felt nothing. Now, belatedly, a dull pounding pain crept up my leg. I breathed deeply, gulping air between the waves crashing around my head. Then I began attempting to wriggle free, with no success.

I tried to lift up the heavy boulders, but it was impossible. My imprisoned foot kept

me in place, constricting my position and preventing me from finding any leverage. After many useless heaves, and much splashing and cursing, I had to give up.

All this time, panic had been building within me. As soon as I stopped struggling, terror flooded my brain with the fear of drowning, the fear of freezing in the cold sea, the fear of more rocks falling on top of me. My thoughts were overwhelmed by the prospect of imminent death.

It took long minutes to regain any coherence. Gradually I asserted some self-command, telling myself that the panic was a relic of my old body, which wouldn't have survived long floating in the North Sea in winter. My new form was far more robust. I wouldn't drown, or freeze to death. If I could compose myself, I'd get through this.

I concentrated on my exo-skin. Normally its texture approximated natural skin's slight roughness and imperfections. Now my leg became utterly smooth, in the hope that a friction-free surface might allow me to slip free. I felt a tiny amount of give, which sent a surge of hope through me, but then I could pull my foot no further. The bulge of my ankle prevented any further progress. Even friction-free, you can't tug a knot through a needle's eye.

Impatient and frustrated, I let the exo-skin revert to default. I needed to get free, and I couldn't simply wait for the next storm to rattle the rocks around. My starship would soon leave Earth. If I missed it, I would have no other chance.

At this point I began to wonder whether I'd subconsciously wanted to miss the boat. Had I courted disaster, just to prevent myself from going?

I couldn't deny that I'd in some sense brought this on myself. I'd been deliberately reckless, pushing myself until the inevitable accident occurred. Why?

Thinking about it, as the cold waves frothed around me, I realized that I'd wanted to push beyond the bounds of my old body, in order to prove to myself that I was worthy of going. We'd heard so much of the harsh rigors of the destination world, and so much had been said about the naturals' inability to survive there unaided, that I'd felt compelled to test the augments to their limit.

Unconsciously, I'd wanted to put myself in a situation that a natural body couldn't survive. Then if I did survive, that would prove I'd been truly transformed, and I'd be confident of thriving on the colony world, among the tides and hurricanes.

Well, I'd accomplished the first stage of this plan. I'd got myself into trouble. Now I just had to get out of it.

But how?

I had an emergency radio-beacon in my skull. I could activate it and no doubt someone would come along to scoop me out of the water. Yet that would be embarrassing. It would show that I couldn't handle my new body, even in the benign conditions of Earth. If I asked for rescue, then some excuse would be found to remove me from the starship roster. Colonists needed to be self-reliant and solve their own problems. There were plenty of reserves on the waiting list—plenty of people who hadn't fallen off a cliff and got themselves stuck under a pile of rocks.

The same applied if I waited until dawn and shouted up to the next person to walk along the coastal path. No, I couldn't ask for rescue. I had to save myself.

Yet asserting the need for a solution did not reveal its nature. At least, not at first. As the wind died down, and the rain softened into drizzle, I found myself thinking coldly and logically, squashing trepidation with the hard facts of the situation.

I needed to extract my leg from the rock. I couldn't move the rock. Therefore I had to move my leg.

I needed to move my leg, but the foot was stuck. Therefore I had to leave my foot behind.

Once I realized this, a calmness descended upon me. It was very simple. That was the price I must pay, if I wanted to free myself. I thought back to the option of calling

for help. I could keep my foot, and stay on Earth. Or I could lose my foot, and go to the stars.

Did I long to go so badly?

I'd already decided to leave my family behind and leave my girlfriend. If I jibbed at leaving a mere foot, a minor bodily extremity, then what did that say about my values? Surely there wasn't even a choice to make; I merely had to accept the consequences of the decision I'd already made.

And yet I delayed and delayed, hoping that some other option would present itself, hoping that I could evade the results of my choices.

I'm almost ashamed to admit what finally prompted me to action. It wasn't logic or strong-willed decisiveness. It was the pain from my squashed foot, a throbbing that had steadily intensified while I mulled the possibilities. And it was no fun floating in the cold sea, either. The sooner I acted, the sooner I could get away.

I concentrated upon my exo-skin, that marvel of programmable integument, and commanded it to flow up from my foot. Then I pinched it into my leg, just above my right ankle.

Ouch! Ouch, ouch, ouch, owwww!

Trying to ignore the pain, I steered the exo-skin further in. I wished I could perform the whole operation in an instant, slicing off my foot as if chopping a cucumber. But the exo-skin had limits, and it wasn't designed to do this. I was stretching the spec already.

Soon—sooner than I would have hoped—I had to halt. I needed to access my pain overrides. It had been constantly drilled into us that this was a last resort, that pain existed for a reason and we shouldn't casually shut it off. But if amputating one's own foot wasn't an emergency, I didn't ever want to encounter a true last resort. I turned off the pain signals.

The numbness intoxicated me. What a blessing, to be free from the hurts of the flesh! In the absence of pain, the remaining tasks seemed to elapse much more swiftly. Soon the exo-skin had completely cut through the bone, severing my lower leg and sealing off the wound. Freed from the rockfall, I swam away and dragged myself ashore. There I collapsed into sleep.

When I woke, the tide had receded, leaving behind a beach clogged with fallen clumps of grass, soggy dead bracken, and the ever-present plastic trash that was humanity's legacy to the world. The pain signals had returned—they could only be temporarily suspended, not permanently switched off. For about a minute I tried to live with my lower calf's agonized protestations; then I succumbed to temptation and suppressed them again. As I tried to stand up, I discovered that I was now lopsided. At the bottom of my right leg I had some spare exo-skin, since it no longer covered a foot. I instructed the surplus material to extend a few inches into a peg-leg, so that I could balance. I shaped the peg to avoid pressing on my stump, with the force of my steps being borne by the exo-skin higher up my leg.

I tottered across the trash-strewn pebbles. I could walk! I shouted in triumph, and disturbed a magpie busy pecking at the freshly revealed soil on the new shoreline. It chittered reprovingly as it flew away.

Then I must have blacked out for a while. Later, I woke with a weak sun shining in my face. My first thought was to return to the landslip and move the rocks to retrieve my missing foot.

My second thought was—*where is it?*

The whole coast was a jumble of fallen boulders. The cliff had been eroding for years, and last night's storm was only the most recent attrition. I couldn't tell where I'd fallen, or where I'd been trapped. Somewhere in there lay a chunk of flesh, of great sentimental value. But I had no idea where it might be.

I'd lost my foot.

Only at that moment did the loss hit home. I raged at myself for getting into such a stupid situation, and for going through with the amputation rather than summoning help, like a young boy too proud to call for his mother when he hurts himself.

And I felt a deep regret that I'd lost a piece of myself I'd never get back. Sure, the exo-skin could replace it. Sure, I could augment myself beyond what I ever was before.

But the line between man and machine seemed like the coastline around me: constantly being nibbled away. I'd lost a foot, just like the coast had lost a few more rocks. Yet no matter what it swallowed, the sea kept rising.

What would I lose next?

I turned south, back toward town, and walked along the shoreline, looking for a spot where I could easily climb from the beach to the path above the cliff. Perhaps I could have employed my augments and simply clawed my way up the sheer cliff-face, but I had become less keen on using them.

The irony did not escape me. I'd embarked on this expedition with the intent of pushing the augments to the full. Now I found myself shunning them. Yet the augments themselves hadn't failed.

Only I had failed. I'd exercised bad judgment, and ended up trapped and truncated. That was my entirely human brain, thinking stupidly.

Perhaps if my brain had been augmented, I would have acted more rationally.

My steps crunched on banks of pebbles, the peg-leg making a different sound than my remaining foot, so that my gait created an alternating rhythm like the bass-snare drumbeat of old-fashioned pop music. The beach smelled of sea-salt, and of the decaying vegetation that had fallen with the landslip. Chunks of driftwood lay everywhere.

The day was quiet; the wind had dropped and the tide was out, so the only sounds came from my own steps and the occasional cry of the gulls far out to sea. Otherwise I would never have heard the voice, barely more than a scratchy whisper.

"Soon, my darling. Soon we'll be together. Ah, how long has it been?"

I looked around and saw no one. Then I realized that the voice came from low down, from somewhere among the pebbles and the ever-present trash. I sifted through the debris and found a small square of plastic. When I lifted it to my ear, it swore at me.

"*Arsewipe! Fuckflaps!*"

The voice was so tinny and distorted that I couldn't be sure I recognized it. "Katriona?" I asked.

"How long, how long? Oh, the sea, the dear blessed sea. Speed the waves. . . ."

I asked again, but the voice wouldn't respond to me. Maybe the broken chip, which no longer projected a hologram, had also lost its aural input. Or maybe it had stopped bothering to speak to passers by.

Now I saw that some of the driftwood planks were slats of benches. The memorial benches, which over the years had inched closer to the eroding cliff-edge, had finally succumbed to the waves.

Yet perhaps they hadn't succumbed, but rather had finally attained their goal—or would soon enough when the next high tide carried the detritus away. I remembered the holograms lighting up last night, how they'd seemed to summon the storm. I remembered Katriona telling me about her husband who'd drowned. For all the years of her death, she must have longed to join him in the watery deeps.

I strode out toward the distant waves. My steps squelched as I neared the water-line, and I had to pick my way between clumps of seaweed. As I walked, I crunched the plastic chip to shreds in my palm, my exo-skin easily strong enough to break it. When I reached the spume, I flung the fragments into the sea.

"Goodbye," I said, "and God rest you."

I shivered as I returned to the upper beach. I felt an irrational need to clamber up the rocks to the cliff-top path, further from the hungry sea.

I'd seen my own future. The exo-skin and the other augments would become more and more of me, and the flesh less and less. One day only the augments would be left, an electronic ghost of the person I used to be.

As I retrieved my clothes from where I'd cached them, I experienced a surge of relief at donning them to rejoin society. Putting on my shoes proved difficult, since I lacked a right foot. I had to reshape my exo-skin into a hollow shell, in order to fill the shoes of a human being.

Tomorrow I would return to the launch base. I'd seek medical attention after we lifted off, when they couldn't remove me from the colony roster for my foolishness. I smiled as I wondered what similar indiscretions my comrades might reveal, when it was too late for meaningful punishment. What would we all have left behind?

What flaws would we take with us? And what would remain of us, at the last?

Now we approach the end of my story, and there is little left. As I once helped a shadow fade, long ago and far away, I hope that someday you will do the same for me. ○

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MONSTERS

I saw Count Dracula
dangling from a tree
his pointy teeth protruding
from a goofy smile
underneath a googly-eyed stare.

His skin was a pale green
and his tuxedo was perfect.

In front of the next house
three laughing ghosts glowing
like sixty-watt bulbs
hovered over an inflated pumpkin.

Your myths have been defanged.
Spooks are cross-eyed and harmless
and the boogy man
is afraid of you.

When goblins take pratfalls
and only want to be loved
how could terrors lurk
invisible in the shadows?
Your head full of Count Chocula
and pixelated bumbling snowmen
you will never see
what steals up behind you.

Dracula's skin was not green
and he never wore a tuxedo
nor a crooked grin.

If you can't see me
that doesn't mean I'm not there.
My tattered cloak wraps me in darkness
blacker than the shadows of a moonless night
silent like the wings of a bat
and in the night I am
watching.

And very real.

—Geoffrey A. Landis

FLOTSAM

Elissa Malcohn

Elissa Malcohn burst into our pages in November 1984 with her intensely powerful story "Lazuli." Although another tale appeared in our Mid-December 1986 issue, we've been waiting twenty-three years for the third. We're delighted that the hiatus ends with "Flotsam," a story that was partly informed by Elissa's employment at a government contractor during some of those intervening years. *Covenant*, the first volume of her Deviations series, was published by Aisling Press in 2007. More information and free downloads of the author's work may be had at [Malcohn's World <home.earthlink.net/~emalcohn/index.html>](http://home.earthlink.net/~emalcohn/index.html).

Mercedes would remember July 8, 1973, as The Day of Dead Fish.

Her parents remembered other such days, and this would not be the last one for Mercedes. But it was her first, when she was old enough to know that something was different and very wrong.

The day began with little fanfare and many hugs. An early high tide meant a pre-dawn Mass, when all of the grownups looked to María to intercede and tell Jesús to make the fishes multiply again.

Mercedes floated through the sermon. The censer whispered past her and she inhaled holy air in a room filled with glittering jewels. More angels peeked down at her from their high stone recesses at night. All the candles burned brighter. The Heavenly Host paid more attention to everyone—Mercedes and her brothers, their parents, her aunts and uncles, and their neighbors, who then went home and traded their best clothes for worn jeans and thin cotton shirts. They dressed more like Jesús, who wore simple things, and then they all went to the beach.

Bare-chested men already lined the seawall, dangling their hands between their knees as they sat on concrete blocks and faced into the bay. Cigarette butts littered the sand close to the road. More ashes trailed a line of folding chairs curving along the water's edge. Tubular steel frames backed away from fading imprints that told Mercedes the tide was still coming in.

Her brothers tied lures and practiced with the lines on their own small rods. Mercedes would learn, too, when she got bigger. For now, she cradled her orange play pail to her coveralls. She gazed beyond the crescent of chairs with their gaily colored, frayed webbing and their many cast lines, out to a skyline of gray smokestacks pouring their innards into the clouds.

"It's bad today."

Everyone tossed off talk of the air the way they cast their lines. Most times no one mentioned it at all. The air was better inside the apartment, which smelled like cooking; and best at Mass, which smelled like María.

Mercedes left the other little children and went in search of shells. Pretty fragments lay on the old jetty reduced long ago to a pile of rocks. Mercedes slipped her flip-flops back on, easing around jagged edges and pausing to watch the clams spit. In time the line of chairs receded and the air smelled worse.

That's when she saw the fish. The sea reclaimed them now, but hundreds remained washed ashore, open-mouthed and bloated and covered with sores. They stared in all directions. Some stared back at Mercedes, as though they were still alive.

They stank, but they weren't frightening. Mercedes clutched her orange pail and edged among them. The priest should be here, waving his censer over the stench and blessing them all, they looked so sad. One gasped, twitching beneath the rising sun and slapping still-wet sand. Mercedes edged closer.

Its gills fluttered on its neck above a flat, heaving chest discolored with bruises. Little arms fell limp at its sides. Instead of a tail, Mercedes gawked at a fin tapering to a single point, with skin pale enough to see through.

She looked back toward the head and met startling green eyes. The creature's arms had risen. Now they waved and wavered in the air, struggling. Tiny, perfect fingers reached out to Mercedes, who dropped to her knees and thanked Jesús for the baby.

She made a bed of seaweed in her pail, curled the baby up, and tucked it in with a crown of more seaweed cushioning a concealing layer of broken shells. She said goodbye to the dead fish and was almost back to the line of chairs before her mother's call of alarm made her hurry.

The sun had risen higher and the smells carried farther now. People reeled in eruption-covered catches and threw them back into the water, leaving their own pails empty and their talk filled with Watergate and Managua's slow recovery from the earthquake.

Somehow, everybody still had something to eat. Food magically appeared up and down the block, pulled from pantries and stretched into casseroles. Apartments shifted like sand with people coming in and out, echoes and laughter carrying down the bare-bulbed hallway.

Someone slipped a 45 of "El Galletón" onto a turntable. Honking horns melted through the walls as workers left for their shifts. Mercedes swam in currents of sound, following a thin cry that no one else seemed to hear. It clung to her, leaving brine on her tongue.

She didn't know why she had placed the sea baby inside a garbage bag, or why she had emptied the rest of her play pail and filled it halfway with water from the tap. Knowledge of what to do came first as a gentle prodding and then as a certainty, making Mercedes industrious.

The wooden step stool hurt her toes as she lifted her load. The pail pulled on her arms as she wove around legs and ribbons of tobacco smoke, trying not to slosh.

She made the trip eight times, carrying water through clusters of grownups and past stained cinderblock. One look from her and the other children turned away. She descended a cannabis-flavored stairwell, ignored by older boys and girls whose fingers undulated beneath each other's clothes.

The garbage bag sat inside a rusted metal tub behind the boiler. No one would use the tub until winter, when the boiler had to be bled daily to release the pressure that always built up. Now the nubbly gray walls felt cool and moist, a relief from summer heat.

The baby still looked sick, but its chest no longer heaved. Mercedes watched the calming rhythm of gills beneath a watery layer. Green eyes blinked at her.

She reached into the bag and caught her breath as the tiny hand grasped her finger and held on.

She whispered, "Are you hungry?"

The creature pursed its lips at her and made sucking movements, as though it understood. Mercedes stuck her other hand into the water and gave the baby her index finger to nurse on.

She had to find a bottle. Would she have to heat the milk? She wasn't allowed to touch the stove.

Whom could she tell? If the baby came from Jesús, then why did everything feel so dangerous?

Mercedes knelt on the damp floor and prayed while the skin on her hands wrinkled and chilled and her fingertips grew numb. The rosary beads in her head turned into barnacles. Salty tears splashed into the bag and made ripples above the bruises.

The next morning it was all over.

Mercedes awoke from a dream of placid waters, where she walked in her nightie on the bottom of the sea. Now she rushed past the breakfast table, where her brother Elian dawdled over his cereal. Hector, the oldest, was already doing odd jobs at the factory, helping their father with menial tasks and coming home covered in yellow dust.

Their mother yelled after Mercedes as she hurried down to the basement. Everything agitated inside. She was a massive goose bump, clammy and cold, marveling that her legs could move at all.

The strength left them as she spied the empty tub. The super had made the boiler room distressingly neat, as though preparing for company. The concrete floor was swept, and the film of fog had lifted from glass gauges and tubing. Even the windows overlooking the dirty alley gleamed, secure in reinforced caulking.

Mercedes swayed on her feet. Nothing called to her any more. Out in the alley were steel trash cans with their lids off, gaping at the sky. They'd been emptied into the garbage truck, which had lumbered off with loud complaints, wheezing. Carrying junk.

The sea baby had probably never happened at all. Mercedes accepted that fact later, her bottom smarting from a well-placed slap. Nobody left the breakfast table without permission, and certainly no one ran headlong past the grace of food. She was old enough to know better. What was she thinking?

Her first Day of Dead Fish and the thin, little cry in her head separated, until only the die-offs remained. Those, at least, repeated and were real. Other people talked about them and then fell silent.

The episodes of aborted fishing entered Mercedes's mental category of inconveniences, taking their place beside booster shots, scrambling for rent money, and the sight of body bags whenever somebody turned on the evening news.

On September 17, 1990, everything fell apart.

Esther Weitz listened to full-throated sobbing and didn't know what to make of the daycare worker on the other side of the desk. The young woman rocked in her chair. Thick black hair brushed her shoulders and stuck to her face.

"Ms. Rios—"

Thin fingers brushed the wet strands back. Manicured nails. Mercedes Rios looked away, toward a blank spot on the Employee Wellness Office wall. For a moment she seemed to compose herself.

Then her shoulders began to shake and the wails began anew. Esther pushed her Kleenex box closer. "Ms. Rios, please tell me what's wrong."

She gasped, "I can't."

"I want to help you. I know you feel bad about frightening the children. You're here because your record has been excellent until now."

Fresh tears coursed down flushed cheeks and dropped onto a modest blouse. The tissues remained untouched.

Esther followed her client's gaze to an expanse of cream-colored paint between bookcases. Almost everyone who sat in that chair stared at the same spot. Most eventually disclosed the images they overlaid on it.

Most were not as overcome as Mercedes Rios. Clients that broken-hearted had experienced a sudden death in the family, hit with unexpected, devastating news during an otherwise ordinary day. But that had not been the case here.

This time an innocent video had set off a response so incongruous and out of proportion that trauma had to be the cause. Mercedes sat with her shoulders hunched and clasped her hands above starched trouser legs pressed tightly together.

"Why don't we go over what happened in the playroom?" Esther offered.

Mercedes said, thickly, "They gave you the report."

"I want to hear it from you. You don't have to tell me *why* it happened. Just tell me *what* happened."

Black eyes blazed. "Why? It won't change anything. It'll say I'm unfit to be around children any longer, so just fire me and let me start over!"

"I don't have the authority to do that, Ms. Rios. But I do have the authority to make recommendations to your supervisor, who is concerned about you. Your outburst surprised all of us."

Rios looked ready to curl up into a ball. At least she wasn't crying any more, but that was of little comfort to Esther.

"You have no children of your own," the counselor observed.

"No."

Something was making her voice flatten.

Esther asked, "Do the older children usually operate the VCR?"

Mercedes nodded, still staring at the wall.

"Your supervisor's report says that you were fine until someone inserted a tape of *The Little Mermaid*. Then you seemed unaware of your surroundings. You dropped a juice cup. When the children started singing 'Under the Sea' in time with the movie, you screamed at them to stop."

Mercedes whirled on her. "And how would *you* feel if somebody made a cartoon about the Holocaust?" The twenty-two-year-old's face was inches away, her eyes wild. Her hoarse yell drove Esther's breath from her. "How would *you* feel if nobody cared about what really happened? If they made it all pretty and funny and gave it a happy ending?"

She collapsed back into her chair, her chest heaving. Esther stared at her, stunned, and managed to say, "I lost grandparents in the Shoah."

The tears began again. "Then you know what it's like."

The puffy face became a mask. Mercedes turned away, her expression disturbingly blank. She remained silent for the rest of the session.

The Pollution Prevention Act passed less than two months later. The news reached Mercedes in a footnote on a crumpled sheet of paper titled, "Sample Statement of Work." It was one of many numbered sections dumped into a large trash bin next to a laser printer still spitting out copy at seven o'clock. Fluorescent lights burned up and down the hallway on a frigid Saturday night in November.

Even the daycare center was open this late, but Mercedes didn't go there any more. She absently smoothed her custodial uniform, as if doing so would unkink the print in her hand. Below it rested more than a dozen reams worth of garbage.

If the company knew how much she took home with her, it would fire her for sure.

She was stealing proprietary garbage, whose final drafts would become government property. Mercedes had figured out that much.

She wheeled the discards from one room to the next, knocking on doors before she entered to empty smaller bins. The secretary thanked her. Most of the others remained fixated on their computer screens. Outside a locked door lay a small mountain of paper and a top sheet on which someone had scrawled BASURA in black magic marker. Mercedes added those piles to the rest of the trash.

The same people were still in their offices on Sunday afternoon and late into Sunday night. Mercedes wondered if they ever went home.

She had come straight from church, where one candle burned for Hector, who had died in a factory explosion in 1978. Another burned for Elian, who had died of liver cancer the following year. She had lit votives for her mother and father, for Aunt Amalia and Uncle Francisco. For lung cancer and for emphysema and for COPD, now that she knew what COPD meant. The garbage had told her.

They'd all smoked. That fact had hung in the air longer than any stack and fugitive emissions spewed from across the bay.

A tether connected her to the sea floor. She couldn't see it, couldn't touch it. But it was there, the pull of family, a baby's green eyes, certainty wrapping her like seaweed. Her people.

Children of God, all of them.

Mercedes lit a last candle in its red-tinted glass for her imagination and didn't tell a soul.

"It made electrical equipment."

Esther Weitz jotted notes on a legal pad. "The plant where your father worked."

"Father and brother."

Mercedes could talk about them more easily than about the thing that never was. Esther had lost family, too. She lit candles called *yahrzeit*.

"It closed down in 1980, when the—when the laws changed." How much was a maid not supposed to know? The more knowledge Mercedes amassed, the more perilous everything became. "After what happened in Love Canal."

Esther's pen scratched. "Those people lived near the water, too."

Mercedes looked down at the hands in her lap. "St."

"I've noticed that you revert to Spanish whenever you don't want to tell me something." Blue eyes blinked at her through bifocals. "Usually when we get near the beach."

Mercedes tried to keep the misery from her voice. "I've told you about all of the dead fish. What more do you want to know?"

"I know that the dead fish are not the whole story, Mercedes."

She laughed a little and reached for a tissue. "*Círculo*." She dabbed at her eyes and twirled her finger in the air. "Spanish for 'circle,' you know? That's what CERCLA means to me. I see the word over and over, and it keeps bringing me back to the same question: Why? They did a Habitability Study on Love Canal, but not where I lived. Just because the factory is gone now, does that mean nobody should look at the water?"

The air crackled around Mercedes until she couldn't tell where one risk ended and another one began. How many sea babies were dying? How many were washed away from their mothers' arms year after year in tides of effluents?

The questions were terrifying because they shouldn't even exist. They sprang from the fantasies of a little girl, lying in wait for her like monsters under the bed.

But the monsters under the bed had gone away.

Her counselor squinted at her from across the desk. "CERCLA?"

"Comprehensive Environmental Response, Compensation and Liability Act." The

English formed jagged boulders, building a seawall in her mouth. "It's on all the papers people throw away. They keep rewriting the same things. They've been doing it for days."

"Proposals are like that, when you're a government contractor." Esther laid her pen down, eyebrows raised. "I see you don't just collect the trash."

"You say I use Spanish to hide things from you." Mercedes stood, shoving her hands into the armpits of her uniform. No matter which way she teetered, it would be toward an abyss. She began to pace, from bookcase to bookcase. Only four steps. She had not realized the Employee Wellness Office was so small. "I shall tell you what filled my neighborhood when I was growing up. *Cromo. Cobre. Amoníaco. Ace-tona. Glicol de etileno. El fluoruro de hidrógeno. Níquel and Estireno. Metanol. Di-clorometano and Tolueno and Tricloroetano.*"

Spines blurred. The labels on the three-ring binders could have been anything, wavering through salt water. "They sound pretty in Spanish, no? Poisons. They came in the air and in the water. Until one day everything burned, just before everything closed. Everybody said it was arson and nobody got charged, and for three days we were told to keep our doors and windows shut and not go outside. No work, no pay. No pay, no rent. No rent, no place to live. So people went outside anyway."

Esther's eyes gazed holes into her back. For a moment Mercedes thought that they were green.

"I'm sorry, Mercedes." The sound of genuine sorrow made her want to turn around. "But that's not what sent you to me, is it?"

Why couldn't Esther be like the Father Confessor, happy with what she was given? Why couldn't she just send Mercedes away with a prescription of Hail Marys? A penance for every fish and a prayer for every grain of sand? Instead, she kept probing, dragging her nets in search of bottom feeders. Dark and murky and not real. Not worth telling about.

What if every soul had to file a Toxics Release Inventory?

"Do you know what's funny?" Mercedes asked, not turning around. "I overhear the office workers. They take these proposals, many copies in a big box, and they buy a seat on the plane to Washington just for the box because they will not let it out of their sight. You'd think it was a living thing, like that. But it's only paper."

Esther asked, "What did you let out of your sight, Mercedes?"

Nada.

She whispered, "I have to go."

Half a year after the Day of Dead Fish, the Endangered Species Act passed. Nothing on its list resembled the child. It was amended in 1988 and still nothing resembled the child.

Marine protection laws had passed the year before that day on the beach, but they didn't reach where Mercedes lived. Neither had the Federal Water Pollution Control Act, though it was supposed to, or the Clean Water Act that followed. Mercedes searched through empty promises in leather-covered books and returned them to their shelf, beside economic and regulatory impact assessments bound in black plastic coils.

She maneuvered her Electrolux around the corner office, whose mahogany desk was as messy as the plastic modular ones in the rooms without windows. She shut off the vacuum and turned to a bin beside the file drawer. There, chocolate frosting and bits of yellow cake smeared the ink on a crookedly printed spreadsheet. A paper plate colored in Christmas wreaths leaned against a thin plastic liner. Mercedes gathered and tied off the bag, squeezing out a puff of sickly sweet air.

She worked her way down to the conference suite, whose partitions had been

wheeled open to create a giant room. A mirror ball hung from one of the tracks, amidst green and red streamers looping toward a white board. She accepted a small apron from one of the kitchen staff, tied it around her waist, and set about harvesting discarded food and plastic ware. The fifty-gallon trash can in the hallway filled with sliced carrots, cubed red peppers, broccoli florets, and half-eaten cake contaminated by ranch dressing. The waste felt as palpable as a slap.

The people around Mercedes paid no attention to her, or to the singing deejay who segued from "Blue Christmas" to "Margaritaville" in the corner. Mercedes glided past him and past the tall, plastic tree hung with tinsel, advancing from a cluster of research assistants to a cluster of programmers and then to managers. She sampled the foreign tongues of shop talk. Almost no one crossed the lines, from one professional level to another. The few remaining support staff filled their plates with sweets and returned to their cubicles.

Esther gave a faint nod from the Human Resources table and turned back to her colleagues. This was not the Wellness Office, whose walls invited openness. Here in the enlarged conference suite, the invisible walls were obvious, separating Esther even from the electric menorah barely visible on the other side of the deejay.

Except for the free food, everyone could just as well have been working at their desks. Mercedes floated through a party that didn't exist.

Yet it was strangely comforting.

What did an exposure threshold mean for a sea baby? Who could say whether toxins had bioaccumulated inside it or not? Jesús had not measured the sins of the world in parts per billion, he had just absorbed them all.

Now he glowed on the cross beneath a crimson sky, flickering at Mercedes from the *veladora* on her dresser. After three days of burning, the light from its wick shone through his heart and lit his halo from beneath. Behind him, his mother *La Virgen de Guadalupe* grieved within her golden frame.

Discarded papers covered the floor.

Mercedes stooped to lift the sheets one after another. She set them down again, moving bits of analysis from one pile to the next. Throughout the night her bed remained undisturbed and tucked in as ink swam before her eyes. Between the lines she prayed to San Peregrino, patron saint of cancer and incurable diseases, who had stood on his feet for more than thirty years as penance for his sins. His sores became like those on the fish thrown back to sea.

What if she had never gone to bed that night? What if she had stood over the rusted tub and prayed long and hard enough for warm milk to spurt through her finger and for tap water to wash away the bruises? The thin cry in her head had itself been a miracle, percolating up from the basement and driving her on while no one else noticed a thing.

Mercedes paced in her stockings, still in her uniform. She stopped to retrieve a shawl from her closet and draped it about her shoulders, black against gray. Murky tones, like the bottom of the sea in a long-ago dream, when she should have stayed awake instead.

La enfermedad invade mi cuerpo, mi corazón y mi fe desfallece . . .

No.

It was Elian who'd been invaded by disease. It was her mother whose heart had stopped. Her father whose faith had drained away into a respirator. They lodged inside her, too, in a world where the people above the water were just as invisible as those beneath.

Nobody cared about them. They all cared about *The Little Mermaid*, the cartoon princess who'd lost her voice to a jealous witch and regained it for love. No one both-

ered to look for the actual mermaids, just as no one bothered to look at the neighborhoods whose bays and streams they inhabited.

How many communities were so blessed? How many were so cursed?
There was magic under the sea, and it was dying.

I have written to Woods Hole.

Mercedes watched imaginary envelopes fly past cream-colored paint between the bookcases. How could she even formulate a plea?

I have written to EPA. I have written to NOAA. I have written to UNESCO.

Dazzling acronyms. They vacuumed her letters up and remained black blots. Every fantasy ended the same way.

She didn't know how long she'd been staring at the same spot, refusing to sit in the chair beside the tissues on Esther's desk. She was not as strong as San Peregrino. Even after only a few short weeks, even with snatches of sleep, she felt faint. Her legs had turned into lead. Her feet burned. Volatile organic compounds.

Don't heal me. Heal them.

She struggled for breath.

On other people's desks the Mother of All Wars raged in headlines, with more Scud missiles falling on Tel Aviv.

"Mercedes." Weariness ringed Esther's voice. "What do you see on the wall?"

She rasped, "Did you make it like this on purpose?"

"No, but the blank space has proved useful. You're evading the question."

Mercedes snuggled against a bookcase and laid her cheek on the paint. Teak veneered particleboard held her up. "No one would listen."

"I'm listening, Mercedes."

She blinked dry eyes. "No one would believe me."

"There are people who believe the Holocaust never happened, Mercedes." Esther's voice was a ragged line dropping through depths. "There are people who can't conceive that my uncle has a boyhood friend who can't travel out of Gaza now, because he is a Palestinian."

Mercedes whispered, "This is different."

"Is it?"

"We have no headlines." She peered into the crack between the shelving and the wall. "We have no museums." A chill spread across her chest, drawing her arms in closer. "Nobody had tattoos. The stigmata were all on the fish."

The question from behind was almost too soft to hear. "And on what else?"

Did bones lie at the bottom of the sea? Fingers, a humanlike skull, a spine? Would they have all crumbled and vanished without a trace? Did the creatures live in caves, huddled so deep that no expedition dared search for them? Had they been driven into polluted waterways from a different habitat?

Did any of them reach out to the people above the water, to people with legs, who walked or drove or took the bus to the factories killing them both?

Esther asked, "What are you cradling, Mercedes?"

Mercedes looked down at her arms. She was a Pieta holding air.

She slipped under the sea, drowning.

The counselor stayed with her in the emergency room as a saline solution shipped drugs into her veins. Diaphanous white curtains eddied about them both. Machines beeped as though from far away.

Then she was discharged, still muzzy-headed from the chemicals. Before the fog had completely cleared, Mercedes was standing in line at the Unemployment Office. She never saw Esther again.

She became a succession of uniforms, drifting among counters and filling bags. The beach where her family had fished grew a boardwalk and a gazebo. An apartment bloc of subsidized housing rose where the electrical equipment plant had once stood, across the bay from renovated condominiums. Rented yellow kayaks and sailboards chased the tide, buffeted by clean winds.

Computer screens turned from black-and-white to color. "El Galleton" became an MP3 stream.

She huddled in the public library between two adolescents headphoned into video games and listened to tinny echoes. With a keystroke she could access twenty-four GPS satellites in geosynchronous orbit and none of them could find what she was looking for, no matter how long she waited to use a machine or how often her time ran out. Mercedes sank her fingers into the gray at her temples and navigated keywords until the Internet became an undertow.

She became a quiet wraith, gliding past stacks between shifts. She awaited her turn crouched among the few monographs she could find. Almost everything was on computer now. Hearing the library staff call her name attained the weight of communion, even for fruitless searches.

The library's central air labored on a sultry evening as Hurricane Dennis left casualties in the Caribbean and spun toward Apalachee Bay. Mercedes glanced over as a teenager with chopped purple hair dropped into the chair to her left and logged on.

Mercedes smiled at the girl's Live 8 tee that promised to change the world and was about to turn back when the image on the neighboring screen began to load. Despite the weak A/C, her teeth chattered.

The girl turned toward her, pierced eyebrows in a squint. "You okay?"

The photo tags read "Monkey Island" and "Port Antonio." At first glance the shot showed only broken branches and spiny sea urchins and not the battered doll in the mid-ground. Below its waist stretched an unruly mass of blackened plastic. Its legs had been partially melted, fused together, and stretched out like taffy.

Mercedes shook her head. "Is nothing."

A silver stud ticked up. "Bullshit." She peered closer. "The storm hit Jamaica. I wonder if it blew that in." She clicked the zoom.

Mercedes said, "It must have been in a fire."

"No, I've seen others like that. There's one made out of wood in Indonesia. One made out of bread dough in some Ecuadorean village. I saw one made out of mud on a riverbank in a jungle somewhere. No, wait, that was the Mississippi. Like they were trying to make mermaids but nobody could give them a decent tail. It's weird."

Mercedes glanced at the user clock on her own computer. Eleven minutes remained before she had to yield the machine again. That left less than an hour for the forty-minute bus ride to her night shift. "What do I search on? What keywords?"

The girl shrugged. "I don't know. The keywords are all over the place, too. Just don't type 'mermaid'—you'll get a thousand bikini shots before you get one of those."

"Who makes them? Who takes the pictures?" Relief workers? Tourists? How many people in the world didn't have access to a camera, let alone a computer? How many were creating representations in the only way they could?

"Hey." Black-painted fingernails touched her arm. "What's with you and them?"

Mercedes fought to keep her voice steady. "They remind me of something, that's all."

"Suit yourself." The nails returned to their keyboard. "I found them by clicking on Random, but it took forever."

The doll vanished, replaced by a wedding photo from half a world away. Blurs on a dance floor.

Random.

She hadn't carried a child for nine months, she had carried it for thirty-two years. Mercedes couldn't say whether the sea baby had invaded her dreams because she didn't remember her dreams. Instead, memory hovered about her shoulders as she navigated daily fogs smelling of cleanser and fry oils. She caught snatches of sleep on a time-shared mattress and awoke with wrinkled cuticles, as though her hands had spent the night submerged in tap water. Her body ached.

Sometimes Mercedes almost hopped the bus to the beach. Maybe if she stood with her bare feet in the surf, she could touch what was underneath again. But it was not her beach any more. All that remained was the ever-present need that swept her to the library, to live her life in one, maybe two half-hour increments before she had to leave it again.

She found a new flyer tacked to the bulletin board between the rest rooms and blinked at its promise of "grassroots environmentalism." On the other end of a pay phone line, a pleasant-voiced man agreed to see her after closing.

Mercedes watched the parade of street lamps as her bus carried her past a line of piers and left her between puddles of iridescent rainbows. She followed memorized instructions, careful of which streets to avoid and which to trust, however furtively, until Duvall Hix called her name out of the shadows and escorted her between the warehouses.

She thanked him for seeing her at such an irregular hour.

He waved it off. "You're giving up a lot to come here."

"You're talking about birth defects."

Shirttails vanished around a corner, leaving Mercedes surrounded by posters and old wooden filing cabinets. She circled a large meeting table and listened to the uneven rhythm of steam pipes, then to bearings sliding on well-oiled runners as Hix checked his archives.

A pistachio-colored ceiling with stamped metal moldings shifted time out of the twenty-first century and back more than fifty years. Mousetraps dotted the corners on aged linoleum tile. Mercedes half-expected to find a black rotary phone beside the pamphlet display, the computer seemed so out of place.

They had traveled to the sixth floor in a freight elevator and walked down industrial-painted hallways. The director of the 58th Street Coalition had unlocked a metal door bearing a hand-lettered sign.

Hix returned with a black-and-white eight-by-ten and laid it on the table. "What you've described is not unheard-of. It's called sirenomenus. Mermaid syndrome."

A shriveled corpse stared up from the photograph. The typed line on its yellowed tag dated it to 1983.

Mercedes held the sheet in both hands. Agreeing with him would be so easy. It would make the most sense. She could point to an actual creature, to an actual cause, and tell the churning in her brain and her heart to stop.

Except it wouldn't.

She said, "It's not a birth defect, Mr. Hix."

"Duvall." He sat opposite her and laid out a series of fact sheets on PCBs and dioxins, followed by water and soil reports. "These will tell you what we're up against. We've got kids playing in brownfields that were supposed to be remediated more than a decade ago. It's no wonder you saw something like this."

"Did they do an autopsy?"

"No, not to my knowledge. The effects were already obvious."

She laid the sheet back down. "This was not a human child."

She forced herself to watch the emotions playing across his face. His quiet distress

made her throat close up. They could agree that the child in the picture was more than twenty years dead, and that it had once been alive and real, so why not leave it at that?

Did villagers in remote corners of the world fashion sculptures of birth defects?

Hix reached into his pants pocket, flipped open a battered wallet, and laid a smaller, color photo on the table. Mercedes looked down at a pair of buck-toothed smiles, sprays of dark freckles across brown cheeks, and eyes that looked just like Duvall's. She guessed the boy's age to be about nine, the girl's about seven. "They're beautiful."

His words were measured weights. "I will do everything I can to keep them healthy, Mercedes. From what you've told me, I wish I could have done the same for your family." His fingers caressed the image. "I wasn't with you when you found whatever you found. I didn't see what you saw, so I can't speak about it. But when I go home every night, the faces here tell me what I have to do, with what little resources we have. Do you understand what I'm saying?"

Less than a hand's breadth of wood grain separated the shots. On one side were living, breathing children whose joy gave no indication of danger. On the other side lay a long-dead baby with collapsed gills and ruptured skin. Limp flesh tapered to a flat appendage.

Every case in Hix's files had been washed ashore. If these were birth defects, then why were they all found near water bodies? Wouldn't that assume they'd been deliberately drowned and then surfaced again with the tide? What were the chances of that happening?

Mercedes raised her face to Duvall's. She did not withhold her arguments for fear of insanity this time. She knew he wouldn't openly dispute what she told him, regardless of what he did or didn't believe.

Funding evaporated faster than water. Even if he believed her, what could he do?

He found her a cheap room in a patched-up, century-old Victorian subdivided into a dozen odd-shaped apartments with shared kitchen and baths. Sprouts grew in tall jars set in south-facing windows. Mushrooms swelled from flats spread across a musty attic floor. In the fall sunflowers bent beneath their own weight in a tiny, fenced-in yard, their heads tied up in plastic shopping bags to catch the seeds.

More food came from the community garden a mile walk away. Mercedes helped her housemates grow peas and tomatoes beneath a narrow strip of sun between slabs of triple-decker shade. She steered toddlers away from the crops and traded for lettuce and carrots from adjoining plots, then washed and peeled away as much lead uptake as she could.

Everybody spoke about the bad air at a public hearing on the reassessment of discharge ponds and drainage creeks. Reassurances rolled back to them as quickly as the tires discarded off the overpass four blocks away, piling up in the pond closest to the road. Mercedes counted nine tires when the drought hit the pond, cracking its muddy bottom.

The tires didn't stop the ducks from returning with the rains, unmindful of the smell of rotten eggs. A muskrat commuted to points unknown. Life continued as before.

New tethers snaked around Mercedes, tying her to the people aboveground. Children clustered about her as she bent over the garden, sifting out sand thrown in from the nearby tot lot. They waited for the two-inch-tall GIs that surfaced out of the earth and for the other plastic-molded toys that spring brought. Marbles and jacks rose up like scattered seeds. Half an action figure raced broken crockery toward the open air.

Tiny fingers tugged on Mercedes's dirt-stained pants. No one looked away from her, this time. No one cringed at her occasional outbursts. Eventually the small,

pudgy faces all but eclipsed her memory of bright green eyes above sallow cheeks wavering under the water, lips pursed in hunger.

Hector and Elian returned in suddenly remembered dreams and Mercedes awoke clutching the sides of her narrow bed. For a few minutes she forgot where she was, and it was her turn to stumble down to the breakfast table, stunned by old grief. On those mornings her food lost its taste and she couldn't recall riding the bus to work, but she remembered how many arms had held her, and whose.

Her trauma joined others and became one of the many grooves into which the household settled, so deep they were often buried in laughter. Music floated down the block from open windows after sundown in a confusion of reggae, *Ca Hue*, salsa, hip-hop, kpop. Smoke from tobacco and weed danced pirouettes in alleyways. Mothers yelled at pimped-up sedans to slow down. The city sank new Neighborhood Watch signs into fresh concrete, in place of twisted metal. Children painted a rainbow mural in a restored corner park barely larger than a parking spot. Shopkeepers swept up broken glass. Unsubsidized tenants dug deeper as rents increased.

In April the fireworks started up as usual, littering the streets with spent casings of Coloured Shots and Gulf War Rockets and lighting up police party lines throughout the night. In May an early heat wave overloaded the old power grid again, filling the stoops with gossip and sweat.

In June, Tuan and Letitia dug a hole in the garden to bury a shoebox and changed everything.

Side by side they walked, counting the number of steps they each held the box and keeping their steps equal, because something this important had to be fair. Far behind them the muskrat continued its rounds, a black lozenge cutting through slick.

They walked past purple loosestrife waving from the corner lot. Past the hair salon and the Chinese take-out and the bail bonds. Over the train tracks and under the highway. Letitia scratched around her dress strap, where too much sun had darkened her skin to the color of burnt toast. Tuan stopped to pick wild mulberries from a tree crouched beside the on-ramp.

Their mouths and tongues were stained by the time they reached the tot lot. They continued on toward the vegetables and began scooping out the dirt from between two tomato cages while Tuan softly sang.

Their neighbor Mai turned from her weeding. "What died?"

Letitia mumbled, "We're just playing."

"That's a funeral song, Letitia. You're not supposed to touch dead animals! They're full of germs."

Tuan stopped singing. "This is different."

Mai raised white brows at his uncharacteristic insolence. She rocked to her feet and shouted across the yard, calling for reinforcements in the neighborhood's first-line defense against fallen birds, car-struck cats, and diseased rodents.

In the kitchen a mile away, Mercedes laid her cleaver down as her vision blurred. When it cleared she set her half-chopped carrots in the fridge, dropped the cleaver into soapy water, and fled the house. Halfway to the garden she was still unaware she was being followed, or that doors cracked open and curtains shushed to the side. The people calling her name faded into murkiness.

Eleven children entered the garden behind her, crowding in as she fought her way toward the boy and girl who'd thrown their bodies over the box and dug their fingers and toes into the dirt. She didn't know what strength let her pry the yelling adults away.

"Water!" She screamed over the heads of her entourage. "Somebody fill a tub with water and bring it here! Now!"

Tuan's voice was muffled against the ground.

"No, sweetie. It's still alive." They had so much to do. Mercedes touched a steely little arm. "Letitia . . . let me see . . ."

A geyser exploded above the hubbub as a teen opened a hydrant. Re-directed splatter rang against metal.

Letitia raised a tear-streaked face to Mercedes.

"I know it's a baby." Her voice dropped. "You found it near the pond?"

Letitia nodded. Mercedes cradled the girl's head.

The same cry as before lodged in her breast but much thinner this time, much softer.

Tuan said, "It's a boy."

"With a tail and no legs. Like a mermaid. Yes?"

High-pitched voices behind her broke into a torrent.

"Fish food! Get him fish food!"

"Where's a pet store?"

"I dunno, I never saw a pet store!"

"Get seaweed then!"

Mercedes said, "He's still too young for seaweed."

She blinked back tears as the silent cry rang through every child. They all clung together like tentacles stemming from a single body. Her neighbors made way as two pairs of flame-tattooed forearms dropped a steel tub beside her, sloshing water onto the mulched walkway.

Mercedes took and opened the shoebox from Letitia and groaned. The sea baby looked as dead as the one in Duvall's photograph. No wonder the children almost buried it.

Voices rose as she lowered the infant into the tub. Kinked gray hair fell over her eyes as she growled back, "I'm *not* drowning him. It's *not* a birth defect. Ask the *bebés*, they'll tell you."

The sun beat sweat from her brow. Mercedes held onto the lip of the tub and blinked at people and tomatoes through waves of heat. Below her, the gills began to flutter more strongly.

Behind her, a man asked, "So, what do we do now?"

A tiny fist gripped her finger. Green eyes opened.

"He'll eat earthworms." This was a garden. They couldn't be in a better place. Her voice rasped. "Look for earthworms. Mash them up."

The children fanned out immediately, digging in the dirt.

The man said, "That's not what I meant."

Mercedes whispered, "I know."

She listened to the buzz of speculation around the plots. *Yes, there are more*, she wanted to say. *Yes, they've been here all along, just like us*, she wanted to say.

No, they are not our competitors.

Wouldn't they be? If Mercedes wrote her fantasized letters, if she sent them off to Woods Hole and EPA and NOAA and UNESCO with pictures and documentation, what then?

Which would the authorities relocate? Who would sooner be placed on an endangered species list?

You can't fund everything.

No. The children understood. Tuan, grasping nightcrawlers in his hand. Letitia, holding another one at arm's length away from her dirt-smeared dress. Even Ho, the biker sitting hunched against the garden fence and chopping up a plate of worms with his Bowie. They all knew this was a child like any other child.

Except it wasn't.

The sea baby was a *discovery*.

Someone said, "Fire department," amidst growing sirens.

Mercedes looked down at the bruised body and tapered tail, across at the filthy hands offering wrigglers to Ho, up at the tightly controlled fear in her neighbors' eyes. Once the hydrant was closed, the fire official would take one glance at the crowd and summon a police cruiser. This was no block party.

What if all those years ago, while she dreamt she walked on the bottom of the sea, the super had lifted that other baby in its plastic bag and returned it to its polluted waters instead of dumping it in the trash? Separate peoples, living apart in their own poisoned worlds?

Tiny lips zoomed in on her pinky and began to suckle. Mercedes took the first batch of formula in her free hand, a slurry of worms and water in a bottle with a nipple hacked off at the tip. Letitia squatted by her side as she lifted the baby just high enough to get the nursing started.

The girl snuggled against her. "What's going to happen to him?"

"I don't know," Mercedes said. "But pray for him, okay? And tell the uniforms to come see me."

"What are you going to say to them?"

"Just do as I ask."

She smiled a little at Letitia's struggle to tear herself away. A housemate came forward, and then a second, marveling. Now that the sea baby was alert, now that it was feeding, it didn't seem quite so unreal.

But if it were real, would that make it a threat?

Help me, María. Help me, Jesucristo.

Mercedes closed her eyes against the sounds of suckling, and opened them again as the water shut off. ○

UNHOST STORIES

Howling, chilling, rattling,
I smile when I read these,
singled out as signs and markers
of the nearby unquiet dead.
Ectoplasm? Sure, that shows ghosts,
but so does longing, hands
that reach in the wind, songs
that linger on the mind, fumbles
partially remembered on the lips.
It is not haunting that needs
explanation. Haunting is life.
It is unghosting that needs
a tale, ghostlessness unique.

—Greg Beatty

Years ago, Robert Reed tells us, he read about the Vikings in Greenland, and in particular, the graves uncovered centuries later when Europeans rediscovered that lost colony. As the climate cooled, the graves got shallower and the bodies inside grew smaller and sicker—an image of slow decay leading nowhere good. He asked himself: "What did the doomed Vikings think about when they went through their days? They thought about their own lives, of course; about the little and large affairs that concerned them at the most personal level. They thought about food and love and so on. Their tiny communities were dying, but even if they recognized that, the details of ordinary life had to take center stage." The exhalation of those thoughts led him to . . .

BEFORE MY LAST BREATH

Robert Reed

Thomas

The afternoon was clear and exceptionally cold. An off-duty company geologist was driving across the floor of the mine when a flash of reflected light caught his gaze. He didn't particularly want to go home, and thirty-one years in the coal industry hadn't quite killed the curious boy inside him. Backing up, he saw the flash repeated, and it seemed peculiar enough that he pulled on his stocking cap and mittens and climbed slowly up over the lignite coal, taking a close, careful look at something that made no sense whatsoever.

His fingers were numb and nose frostbitten when he reached the field office. But he didn't tremble until he came to the maps, showing his superiors what patch of ground shouldn't be touched until more qualified experts could come in and kick around.

"What'd you find?" they asked.

"An unknown species," seemed like an honest, worthy answer.

Sixty million years ago, plant material had gathered inside a basin sandwiched between young mountain ranges. Then the peat was covered over with eroded debris and slowly cooked into the low-sulfur treasure that today fed power plants across half of the country. Fossils were common in Powder River country. The coal often looked like rotted leaves and sticks. But there was no way to systematically investigate what the gigantic machines wrested from the ground. Tons of profit came

up with every scoop, and only one person in the room wanted the discovery preserved, no matter how unique it might be.

The geologist listened to the group's decision. Then he lifted the stakes, showing the photographs that he had taken with his cell phone camera. "This resembles nothing I've ever seen before," he added. Then mostly to himself, he muttered, "It's like nothing else in the world."

"I've seen these before," one supervisor barked. "It's nothing, Tom."

Normally an agreeable sort, the geologist nodded calmly, but then his voice showed bite when he asked, "Why can't we damn well be sure? Just to be safe?"

"No," another boss growled. "Now forget about it."

Thirty-one years of loyal service to the company brought one undeniable lesson: This argument would never be won here. So he retreated, driving into Gillette and his tiny house. His wife was sitting in front of the television, half-asleep. He poured the last of her whiskey down the sink, and she stood and cursed him for some vague reason and swung hard at his face, and he caught her and wrestled her to bed, saying all of the usual words until she finally closed her eyes. Then he collected several dozen important names and agencies, sending out a trim but explicit e-mail that included his phone numbers and the best of his inadequate pictures. Thomas showered quickly, and he waited. Nobody called. Then he dressed and ate dinner before carrying two shot-guns, unloaded, and a tall thermos of coffee out to the truck, and, after a few minutes of consideration, he drove back to the mine, parking as close to the fossil as possible.

Tom's plan, such as it was, involved shooing away the excavators as long as possible, first with words, and, if necessary, empty threats. But these were temporary measures, and worse, he discovered that his phone didn't work down here in the pit's deepest corner. That's why he stepped out into the cold again. Navigating by the stars and carrying a small hammer, he intended to break off a few pieces of the fossil—as a precaution, in case this treasure was dug up and rolled east, doomed to be incinerated with the rest of the anonymous coal.

Mattie

Few took notice of the peculiar e-mail. Three colleagues called its author, two leaving messages on his voice mail. CNN's science reporter ordered her intern to contact the corporation's main office for reaction. The PR person on duty knew nothing about the incident, sharply questioned its validity, and after restating his employer's sterling environmental record, hung up. In frustration, the intern contacted a random astronomer living in Colorado. The astronomer knew nothing about the matter. She glanced at the forwarded e-mail, in particular the downloaded images, and then said, "Interesting," to the uninterested voice. It wasn't until later, staring at the twisted body with its odd limbs and very peculiar skull, that her heart began to race. She called the geologist's phones. Nobody answered. Leaving warning of her imminent arrival, she dressed for the Arctic and grabbed the department's sat-phone, buying two tall coffees when she gassed up on her way out of Boulder.

Better than most, Mattie understood the temporary nature of life. This woman who had never before been stopped by the police earned three speeding tickets on the journey north. Approaching the mine, she slipped in behind an empty dump truck, driving almost beneath the rear axle, and because the only security guard happened to be relieving himself, she managed to slip undetected out onto the gouged, unearthly landscape.

GPS coordinates took her to a pickup truck parked beside a blackish-brown cliff. The engine was running, a stranger sleeping behind the wheel. Beside him on the

seat was what looked like huge, misshapen hands cradling a large golden ring. Two shotguns were perched against the far door. For a brief moment, she hesitated. But Mattie shoved her natural caution aside. With a tap on the glass, she woke the stranger, and startled, he stared out at what must have looked like a ghost—this young woman with almost no hair and a gaunt, wasted face.

He nervously rolled down the window.

"Are you Thomas Greene? I'm Mattie Chong."

Stupid with fatigue, Tom asked, "What are you doing here?"

"I came to see your alien," she reported.

He accepted that. What bothered him more was the stranger's appearance. "Ma'am, if you don't mind my asking . . . what's wrong with you?"

"Cancer," Mattie reported amiably, throwing her flashlight's beam against the deep seam of lignite. "And if I'm alive in four months, I'll beat all of my doctors' predictions."

The President

It was rare not to be the most important man in the room. And today brought one of those exceptional occasions: a trailer crowded with scientists and Secret Service agents, mining representatives and select reporters, plus the three-person congressional delegation from Wyoming. But the hero of the moment was Dr. Greene, and everybody wanted to stand beside the renowned geologist. Of course Dr. Chong should have shared this limelight, but she was flown to Utah this morning, her illness taking its expected, presumably fatal turn. The president was merely another visitor, and as the lesser celebrity, it was his duty to shake hands and ask about the poor woman's health. Every researcher had to be congratulated on the historic, world-shattering work. And he insisted on smiles all around. Bullied joviality was the president's great skill, and he was at his best when he was feeling less than happy.

Today was especially miserable. The bitter wind and low leaden skies only underscored a mood that had crumbled at dawn. That's when word arrived that his former Chief of Staff—a slippery political worm on his noblest day—planned to give the Special Investigator everything, including the damned briefcase filled with cash and ten hours of exceptionally embarrassing recordings. The president's administration was wounded, and by tomorrow it might well be dead. Cautious voices wanted the Wyoming visit cancelled, but that would have required an artful excuse, and what would have changed? Nothing. Besides, he understood that if enough people were fascinated with these old bones and odd artifacts, the coming nastiness might not be as awful as it promised to be.

Dr. Irving Case was the project administrator, and he had been on duty for less than a week. But with a bureaucrat's instincts for what counted, he used a large empty smile and a big voice. "Mr. President, sir. Would you like to go see the discovery now, sir?"

"If it's no problem. Let's have a peek at old George."

Back into the winter miseries they went. A tent-like shelter had been erected around the burial site, to block the wind and blowing coal dust. As they strolled across the barren scene, a dozen experts spoke in a competitive chorus, agreeing that the fossil was unique and remarkable, and of course immeasurably precious. The first priority was to disturb nothing, every clue precious and no one certain what constituted a clue. The president kept hearing how little was known, yet in the next moment, a dozen different hypotheses were offered to explain the creature's origins and how it might have looked in life and why it was where it was and why this wasn't where it had lived.

"It didn't live here?" the president interrupted. Aiming for humor, he said, "This splendid desolation . . . this is exactly where every movie alien roams."

Laughter blossomed—the bright fleeting giddiness that attaches itself to men of power. Then they reached the shelter, and reverent silence took hold. Dr. Case mentioned rules. Politely but firmly, he reminded everybody to wear the proper masks and gloves, and nothing could be touched, and then he warned the press to stand back so that all might enjoy the best possible view.

Photographs and video had already shown the mysterious fossil to the world. The enormous stratum of coal in which he, or she, was entombed was long ago dubbed Big George, hence the fossil's popular name. Lights had been strung near the tent ceiling. The coal slag was cleared away, the flat floor littered with scientific instruments and brightly colored cables. What rose before the president was both immediately recognizable and immeasurably strange: sixty million years ago, alien hands had dug a hole deep into the watery peat, and then "George" was lowered in or climbed in, feet first. Shovels had been used in the excavation. Two archeologists pointed at nearly invisible details, describing with confidence how the metal blades must have looked and what kinds of limbs employed them, and even while they were talking, a third voice reminded everyone that conjectures were fine, but nothing was proved and might never be.

George was a big fellow, and even to the uninformed eye, he looked like something from another world. The weight of the rock had compressed him, but not as badly as the president expected. Two bent legs helped carry the long horizontal body, and two more legs were presumably buried out of sight. A fifth limb rose from behind what looked like the angular and watchful face of a praying mantis, and the arm was jointed and complicated and partially destroyed. Dr. Greene had removed the matching hands and now famous gold ring. The corpse was majestic, wasn't it? But in the next moment, in the president's eyes, George looked preposterous. Pieces stolen from unrelated creatures had been thrown together, a wily hoaxter having his laugh at all this foolish, misplaced fascination.

Turning to the world's most famous geologist, the president asked, "How were we so lucky, this poor fellow exposed this way?"

"The coal's weak around the edges of the grave," Dr. Greene explained. His celebrity was wearing on him, puffy eyes half-closed, a dazed, deep fatigue visible in his features and slope-shouldered posture. "If the blade had cut anywhere else, I wouldn't have noticed anything."

"It was the ring you saw?"

"Yes, sir."

The president nodded. "I haven't seen that artifact yet," he mentioned.

Dr. Case stepped forward. "The hands and ring have been sent to the Sandia, sir. For analysis and closer study."

The president nodded, looking up again. "So well preserved."

Dr. Case enjoyed his little stage. "The corpse shows very little sign of decomposition," he explained. "And we don't know why. Maybe the acidic peat and lack of oxygen preserved it. Although it's possible that the flesh was simply too alien and our microbes couldn't find anything to chew on."

The president nodded, pretending to appreciate the vagaries of alien biology. Then he returned to one statement that had puzzled him earlier. "And why do we think George lived elsewhere?"

Somebody said, "The feet."

Each leg ended with a narrow, three-toed foot.

"They're not built for bogs," another voice volunteered. "George would have sunk in to his knees, or deeper."

Against the rules, the president stepped closer. Nobody dared correct him, but the scene grew noticeably quieter. A Clydesdale horse would have been larger, but not by much. He knelt and stared at the lead foot, moving his head back and forth to avoid his own shadow. Sixty million years in the ground, yet the corpse retained its flesh and what seemed to be its natural color, which was tan. The crushing weight had twisted the dead foot, every toe visible. But what was perhaps more remarkable lay beneath the foot—the remnants of what might be animal skin, cut and stitched to create a simple shoe.

"Is this really a moccasin?" he asked.

Dr. Case joined him, kneeling and pushing his own mask closer to his mouth—making absolutely certain not to contaminate the treasure. "We have at least fifteen features that are probably remnants of clothing, Mr. President. And six metallic objects that look like knives and such, all carried on the body."

"Anything special?" the president inquired.

The administrator blinked, unsure what to make of the question.

"You know, like a laser-gun or portable reactor."

"Nothing like that, sir."

"That surprises me," the president admitted.

Dr. Case stood, offering his hand. "From what we can tell, sir . . . the technology is early Iron Age. If that."

The president rose without anyone's help.

Another few minutes of inexpert study ended when someone mentioned lunch. "A fine idea," the president agreed. "Let the scientists get back to work!" Then everyone filed outside and pulled off the choking masks. The distraction was over, the show finished. The president found his previous depression waiting for him, like a black mountain bearing down on his aging frame. He wiped his mouth with a sleeve, accepted the vacuous thanks of several people, and then he dredged up another one of his patented smiles, wondering why it was that no president had killed himself in office. Considering the pressures of the job, that seemed remarkable. Almost an oversight, really. The idea was so intriguing that he spent the next several moments dancing with a lurid fantasy: He would kill himself today, people around the world would weep, and with that, he would give himself a lasting, however inglorious place in history.

Irving

IHe was asked to say a few words at the funeral, honoring the heroic figure that had been lost. It was a fine speech and a very pleasant day in late September, the press in full attendance and millions watching only Irving. But how does one dispose of the body of a great person, someone composed of digital images and countless memories as well as flesh and bone? That was the question he had asked himself, preparing for this moment. This opportunity. Of course he wouldn't say anything so blatant or borderline crass, but that was the crux of the situation. Most of the world's citizens were anonymous bodies with a few possessions soon to be misplaced. But one can never bury or burn the modern celebrity. Their lives were so vast, so persistent and sturdy, that it was impossible to make a suitable grave. Indeed, death could free the largest celebrities into a greater, more enduring realm where they would never age, and with luck, would only grow even more impressive with the passage of years.

What Irving did address was his great admiration for a colleague who quickly became his good friend. "A sad, tragic death," he said, "and as unexpected as the discovery inside the coal. And we are all the lesser because of it." He didn't mention the deep irony that hadn't escaped anyone's attention: Thomas Greene was killed in a

minor traffic accident, while George's co-discoverer was on the rebound, her withered body responding to an experimental regime of stem cells and tailored phages.

The audience smiled as Irving left the podium.

Of course Mattie deserved the final word, and she used her public moment to beg for full funding of the ongoing Graveyard Project. It was a clumsy display of politics, and only she could get away with it. Irving was the project's administrator, far too exposed to act in such obvious ways. But he was grateful for her waving the hat, and he told her so afterwards. There was a reception back in Gillette, and another one of the endless news conferences, and the two sat close together behind a long table, fielding the same questions again and again.

Ten months after its discovery, nobody knew for sure how large the burial ground was. But evidence hinted at an enormous field of bodies, most of them deeper than George, buried over a period of many thousands of years. That was why the entire mine had been closed and made into a national monument. Power plants were sitting idle back east, but that's how important the Graveyard was. Every reporter wanted to know why the aliens had used this location. Mattie and Irving confessed that they were just as curious and as frustrated by their ignorance. To date, thirty-eight "georges" had been recovered from within the gigantic coal seam. As a rule, the deeper bodies wore better clothes and carried fancier tools, though nothing worthy of a star-traveler had been uncovered yet. Without giving details, Irving allowed that a final census might be coming, and that's when Mattie mentioned the new seismic scans—an elaborate experiment to make the lignite transparent as water.

"Don't put too much stock in success," Irving warned the reporters and cameras. "This technology is new and fickle, and we might not get results for months, if ever."

It seemed odd, a man in his position stanching excitement. But if these scans failed, he might be blamed. And what good would that do? This job was a dream, and Irving intended to remain inside the dream as long as possible. He was successful and couldn't imagine being happier, wielding power over hundreds of lives and a billion-dollar budget: emperor to an empire that had already revolutionized how humanity looked at itself and the universe.

Irving was exhilarated by the news conference; Mattie was exhausted. He made a point of walking the still-frail woman to her car, even when she claimed she could manage on her own, thank you. "I insist," he told her, and they shook hands and parted, and as he walked back into the reception hall, an associate approached quickly and whispered, "Sir, you have to see this, sir."

"See what?"

Then in the next instant, he muttered, "Results?"

"Yes, sir."

The laptop was set up in the little kitchen, linked to Base Camp's computers, and the news was astonishing enough that this man who never failed to find the right words was mute, knees bending as he stared at data that made his fondest dreams look like weak fantasies.

The screen was jammed with white marks and long numbers, each grave given a precise designation tied to estimated size and metal content and other crucial information. The graveyard covered more than five square kilometers, and the dead were thick, particularly in the deepest layers.

"How many . . . ?" he muttered.

"At least thirty thousand, sir."

Again, Irving's voice failed him.

The assistant misread his silence, assuming disappointment. "But that's not the final number," she added. "There're so many bodies, particularly near the bottom, sir . . . the final number is sure to be quite a bit larger than this."

Badger

Why he loved the girl was a complicated business. There were so many reasons he couldn't count them—moments of bliss and the intense looks that she gave him and little touches in the dark and touches offered but then taken away. Teasing. She was an expert at the tease. She was funny and quick with her tongue, and she was beautiful, of course. Yet she carried her beauty in ways most girls couldn't. Slender and built like a boy, she had the smallest tits he'd ever felt up—a fact that he foolishly admitted once. But her face had this wonderful full mouth and a perfect nose and impossibly big eyes full of an unearthly blue that watched him whenever he talked and paid even closer attention when he wasn't saying anything. She was observant in ways he never would be, and she was smart about people, and even though she rarely left Wyoming, she seemed to know more about the world than did her much older boyfriend who had already traveled across the globe three or four times.

Badger had little memory for the places that he had been, but Hanna knew that if she kept asking questions, he might remember what the Sahara looked like at midnight and what he saw on a certain street in Phnom Penh and what it felt like to tunnel his way into an Incan burial chamber seven hundred years after it was sealed off from the world.

"Why Badger?" was her first question, asked moments after they met.

He sipped his beer and looked around the bar, wondering who this youngster was. "Because that's my name," he said with a shrug.

"You dig tunnels, right?"

"Who are you?" he asked.

"Hanna." She'd already settled on the stool beside his. Without another word, she pulled his glass over and took a sip, grinning as she licked the Budweiser off her upper lip. Reading his mind, she said, "I'm twenty-two."

"You aren't," he replied.

She laughed and gave back his remaining beer. "Word is, Badger, you're working at the Graveyard, digging down to the most interesting georges."

"Which high school do you go to?"

"I attend the University in Laramie," she replied. Then she put an elbow on the bar and set her delicate chin on the edge of her palm, fingers curled up beneath that big wonderful smiling mouth. Without a trace of doubt, she told him, "You aren't all that comfortable with women. Are you, Badger?"

"How do you know my name?"

"I've seen you. And I've asked about you, I guess." Then she laughed at him, adding, "Or maybe I heard there was this guy named Badger digging holes for Dr. Chong, and you came tromping in here, and I figured, just by looking at you, that you had to be that guy. What would you think of that?"

He didn't know what the girl was telling him, or if he should care one way or another.

"I know Mattie pretty well," she reported. "Your boss has come to school to talk . . . I don't know, maybe ten times. She's a neat, neat lady, I think."

He nodded agreeably.

"How long has she been in charge?"

"Three months," he answered. "Dr. Case got pushed up to Washington—"

"I bet she drives you nuts," she interrupted.

"Why's that?"

"A feeling." Hanna shrugged and suddenly changed topics. "Does it ever make you crazy, thinking what you're working on?"

"Why would it?"

"The Graveyard!" she shouted. Down came her hand, and she sat up straight on the stool, looking around the quiet bar as if to hunt down a witness to this foolishness. "One hundred thousand dead aliens in the ground, and you're part of the team that's working their way to the bottom of the dead. Isn't that an astonishing thing? Don't you wake up every morning and think, 'God, how incredibly lucky can one burrowing weasel be?'"

"My build," he allowed.

She fell silent, watching him.

"I got the name as a kid," he reported. "My given name is Stuart, but I got the nickname because I've got short legs and a little bit of strength, I guess."

"You guess?"

"I'm strong," he said.

"I can tell."

"Yeah?"

"I like strong," she confessed, leaning in close.

Or maybe it wasn't that complicated, why he loved Hanna. She seemed to truly love him, and how could he not return the emotion? Beautiful and smart and sharp, and he was powerless to ignore her overtures. He gave her the rest of his beer and answered her questions as far as he could, admitting that the scope and importance of the Graveyard was beyond him. He was a professional digger. Using equipment designed by others, he was adept at carving his way through complicated strata, avoiding other graves and other treasures on his way to realms that hadn't seen sun since a few million years after the dinosaurs died away.

Later, Hanna asked, "What do you think of them?"

They were sitting in his truck in the open countryside, at night. So far they hadn't even kissed, but it felt as if they'd been sitting there for years. It was that natural, that inevitable.

"Think about who?" he said.

She gave him a look.

He understood. But the honest answer was another shrug and the embarrassing admission, "I don't think much. I don't know much at all. I've seen hundreds of them, but the aliens still look nothing but strange to me. What they were like when they were alive . . . I don't have any idea . . ."

"You don't call them 'georges,'" she pointed out.

"That's a silly name," he growled, "and it doesn't suit them."

She accepted the logic.

This was the moment when Badger caught himself wondering when he would ask the girl to marry him. Not if, but when.

"Everybody else has a story," Hanna told him. "I haven't met the person who doesn't think these creatures were part of some lost colony or prisoners in an alien work camp, or maybe they were wanderers living in orbit but burying themselves in the peat so we'd find them millions of years later. Just to prove to us that they'd been here."

"I don't know the answer," he said.

"And do you know why?" she asked. "Because you understand what's important." Then she lifted her face to his, and they kissed for a long while, and it was all that he could do, big strong unimaginative Badger, not to ask that girl to marry him right then.

Hanna

He called to ask, "How you doing, hon?"

"Good," she lied.

"Feel like walking around?"

"Why?"

"Dr. Chong says it's all right. I explained how the doctor wants you in bed, but for the next couple weeks you can still move—"

"I get to see the new one?"

"You want to?"

"I'm getting dressed now," she lied, crawling off the couch. "Are you coming to get me, Badger?"

"Pulling into the driveway right now," he reported happily.

So she got caught. Not only wasn't she close to ready, Hanna looked awful, and it took more promises and a few growls before Badger decided she was up to this adventure. Babies. Such a bother! Laying eggs would be so much easier. Drop them somewhere safe and walk away, living your own life until the kids were big enough to be fun. That's how mothering should be.

She mentioned her idea to Badger.

He was driving and laughing. "I wonder where you got that from?"

Georges had laid eggs. The younger females always had a few in some incomplete stage of development. Nobody knew if they put their basketball-sized eggs inside nests or incubators or what. Two years of research, yet the aliens' life remained mysterious, open to guesswork and wishful thinking. But somewhere in those vanished mountains, up high where the air was deliciously thin, the species had struggled mightily to replace the several friends and family being buried every year in that deep black peat.

Mattie was waiting for them at the surface. She smiled warmly and asked Hanna how she was feeling, and Hanna tried to sound like a woman in robust good health. Everybody dressed in clean gowns and masks, and then they took the long walk below ground, following one of the worm-like tunnels that Badger had cut into the deep seam.

Seven other times Hanna had gotten a tour. But this visit was unique because of the age of the corpse being unearthed—one of the first generation georges, it was guessed—and because this was a privilege that not even the most connected members of the media had known.

This body lay at the graveyard's edge. To help the studies, Badger had carved an enormous room beside the fossil. The room was filled with machinery and lights, coolers full of food and drink, a portable restroom, plus several researchers busy investigating the tiniest features, making ready for the slow cautious removal of the dead alien female.

Compared to the first george, she was a giant. Hanna expected as much, but seeing the body made her breath quicken. A once-powerful creature, larger than most rhinoceroses, she now lay crumpled down by death and suffocation and the weight of the world that had been peeled away above her. She was dead, yet she was entirely whole too. The acidic peat was a perfect preservative for flesh born outside this world, and presumably the aliens understood that salient fact.

"Great," Hanna gushed. "Wonderful. Thank you."

"Step closer," Mattie offered. "Just not past the yellow line."

A pair of researchers—sexless in their gowns and masks—were perched on a short scaffold, carefully working with the alien's hands.

"The burial ring?" Hanna asked.

Mattie nodded. "An aluminum alloy. Very sophisticated, very obvious in the scans."

"How different?"

The older the corpse, the more elaborate the ring. Mattie explained, "This one's

more like a cylinder than a ring, and it's covered with details we don't find in any of the later burials."

The clothing was more elaborate, Hanna noticed, legs covered with trousers held up by elaborate belts, the feet enjoying what looked like elegant boots sewn from an ancient mammal's leathery hide. A nylon satchel rode the long back, worn by heavy use, every pocket stripped of anything that would have been difficult to replace.

"Will we ever find the prize?" Hanna asked.

"That amazing widget that transforms life on earth?" Mattie shrugged, admitting, "I keep promising that. Every trip to Congress, I say it's going to happen soon. But I seriously wonder. From what I've seen, these creatures never went into the ground carrying anything fancy or difficult to make."

Those words sank home. Hanna nodded and glanced at Badger's eyes, asking, "What else did I want to ask, hon? You remember?"

"Religion," he mentioned.

"Oh, yeah." Standing on the yellow line, she asked, "So why did they go into the ground, Mattie?"

"I don't know."

Hanna glanced at the woman, and then she stared up at the alien's cupped hands, imagining that important ring of metal. "I know the story I like best."

"Which one?"

"A starship reached our solar system, but something went wrong. Maybe the ship was supposed to refuel and set out for a different star, and it malfunctioned. Maybe its sister ships were supposed to meet here, but nobody showed." Hanna liked Mattie and respected her, and she wanted to sound informed on this extraordinary topic. "Mars or the Moon would have made better homes. Their plan could have been to terraform another world. I know they would have appreciated the lighter gravity. And we think—because of the evidence, we can surmise—that their bodies didn't need or want as much free oxygen as we require. So whatever the reason, Earth isn't where they wanted to be."

"A lot of people think that," Mattie said.

Hanna continued. "They didn't want to stay here long. And we don't have any evidence that their starship landed nearby. But they came here. The aliens set down in the nearby mountains, and they managed to find food and built shelter, and survive. But after ten or fifty or maybe two hundred years . . . whatever felt like a long time for that first generation . . . no one had come to rescue them. And that's why they started digging holes and climbing inside."

"You believe they were hibernating," Mattie guessed.

"No," Hanna admitted. "Or I mean, maybe they slept when they were buried. But they weren't planning to wake up like normal either. Their brains weren't like ours, I know. Crystalline and tough, and all the evidence points to a low-oxygen metabolism. What I think happened . . . each of the creatures reached a point in life when they felt past their prime, or particularly sad, or whatever . . . and that's why a lady like this would climb into the cold peat. She believes, or at least she needs to believe, that in another few hundred years, another ring-shaped starship is going to fall toward our sun, dig her up, and bring her back to life."

Mattie contemplated the argument and nodded. "I've heard that story a few times, in one fashion or another."

"That's how their tradition started," Hanna continued. "Every generation of georges buried itself in the peat, and after a few centuries or a few thousand years, nobody would remember why. All they knew was that it was important to do, and that by holding a metal ring in your hands, you were making yourself a little easier to find inside your sleeping place."

Badger sighed, disapproving of the rampant speculation.

"That might well be true," said Mattie. "Which explains why the rings got simpler as time passed. Nobody remembered what the starship looked like. Or maybe they forgot about the ship entirely, and the ring's purpose changed. It was a symbol, an offering, something that would allow their god to catch their soul and take them back to Heaven again."

Just then, the two workers on the scaffold slipped the burial ring out from between the dead fingers. Mattie approached them and took the prize in both of her gloved hands. Hanna and then Badger stared at what everyone in the world would see in another few hours: A model of a great starship that had once crossed the vacant unloving blackness of space, ending up where it shouldn't have been and its crew and their descendants dying slowly over the next twenty thousand years.

One last time, Hanna thanked Mattie for the tour.

Walking to the surface again, she took her husband's big hand and held it tightly and said, "We're lucky people."

"Why's that?" Badger asked.

"Because we're exactly where we belong," she replied, as if it couldn't be more obvious.

Then they were in the open again, walking on a ravaged landscape dwarfed by the boundless Wyoming sky, and between one step and the next Hanna felt something change inside her body—a slight sensation that held no pain and would normally mean nothing. But she stopped walking. She stopped, but Badger kept marching forward. With both hands, she tenderly touched herself, and she forgot all about the aliens and their epic, long-extinct problems. Bleeding harder by the moment, she looked up to see her husband far ahead of her now, and to herself, with the smallest of whispers, she muttered, "Oh, no . . . not today . . ."

George

Despite night and the season, the thick air burned with its heat and choking oxygen, and the smallest task brought misery, and even standing was work too, and the strongest of the All stood on the broad planks and dug and he dug with them at the soft wet rot of the ground. Everyone but him said those good proper words saved for occasions such as this—ancient chants about better worlds and difficult journeys that ended with survival and giant caring hands that were approaching even now, soon to reach down from the stars to rescue the worthy dead. Silence was expected of the dead, and that was why he said nothing. Silence was the grand tradition born because another—some woman buried far beneath them—said nothing at her death, and the All were so impressed by her reserve and dignity that a taboo was born on that night. How long ago was that time? It was a topic of some conjecture and no good answers, and he used to care about abstract matters like that but discovered now that he couldn't care anymore. His life had been full of idle ideas that had wasted his time, and he was sorry for his misspent passion and all else that went wrong for him. Grief took hold, so dangerous and so massive that he had to set his shovel on the plank and say nothing in a new fashion, gaining the attention of his last surviving daughter. She was a small and pretty and very smart example of the All, and she was more perceptive than most, guessing what was wrong and looking at him compassionately when she said with clicks and warbles that she was proud of her father and proud to belong to his honorable lineage and that he should empty his mind of poisonous thoughts, that he should think of the dead under them and how good it would feel to pass into a realm where thousands of enduring souls waited.

But the dead were merely dead. Promised hands had never arrived, not in their lives or in his. That buoyant faith of youth, once his most cherished possession, was a tattered hope, and perhaps the next dawn would erase even that. That was why it was sensible to accept the smothering sleep now, now while the mind believed however weakly in its own salvation. Because no matter how long the odds, every other ending was even more terrible: He could become a sack of skin filled with anonymous bones and odd organs that would never again know life, that would be thrown into the communal garden to serve as compost, that the All might recall for another three generations, or maybe four, before the future erased his entire existence.

Once again, to the joy of his daughter and the others, the dead man picked up the long shovel and dug. The front feet threw his weight into the blade, and the blade cut into the cold watery muck, and up came another gout of peat that had to be set carefully behind him. Still the right words were spoken, the right blessings offered, and the right motions made, no one daring to complain about the heat or the slow progress or the obvious, sorry fact that the strongest and largest of the All were barely able to manage what their ancestors had done easily.

At least so the old stories claimed.

Then came the moment when the fresh wet rectangular hole was finished and one of them had to climb inside. Odd as it seemed, he forgot his duty here. He found himself looking at the others, even at his exhausted daughter, wondering who was to receive this well-deserved honor. Oh yes, me, he recalled, and then he clicked a loud laugh, and he almost spoke, thinking maybe they would appreciate the grim humor. But no, this was a joke best enjoyed by the doomed, and these souls were nothing but alive. Leaving the moment unspoiled, the ceremony whole and sacred, he set his shovel aside and proved to each that he was stealing nothing precious. Hands empty, pockets opened, he showed them just a few cheap knives that he wanted for sentimental reasons. Then he stepped into the chilly stinking mess of water and rot, and with his feet sinking but his head exposed, he reached up with his long arm, hands opened until that good daughter placed the golden ring into his ready grip.

True to the custom, he said nothing more.

In the east, above the high snow-laced mountains, the winter sun was beginning to rise. Soon the killing heat would return to the lowlands, this brutal ground rendered unlivable. The All worked together to finish what had taken too long, shovels and muddy hands flinging the cold peat at the water and then at him—ceremony balanced on growing desperation—and he carefully said nothing and worked hard to think nothing but good thoughts. But then a favorite son returned to him, killed in a rockslide and lost, and he thought of his best mate whose central heart burst without warning, and because promises cost so little, he swore to both of them that he would carry their memories into this other realm, whatever shape it took.

When he discovered that he could not breathe, he struggled, but his mouth was already beneath the water, his head fixed in place.

With the job nearly finished, most of the All kept working. But others were standing away from the grave—those too weak to help, or too spent or too indifferent—and they decided that the dead could not hear them. With private little voices, they spoke about the coming day and the coming year, gentle but intense words dwelling on relationships forming and relationships lost, and who looked best in their funeral garb, and whose children were the prettiest and wisest, and who would die next, and oh by the way, did anyone think to bring a little snack for the journey home. . . ? ○

THE GHOST HUNTER'S BEAUTIFUL DAUGHTER

Christopher Barzak

Christopher Barzak is the author of the Crawford Award winning novel, *One for Sorrow*, and most recently *The Love We Share Without Knowing*. Both books are supernatural fantasies and both are published by Bantam. Christopher's short stories have appeared in *The Year's Best Fantasy and Horror*, *Realms of Fantasy*, *Strange Horizons*, and *Lady Churchill's Rosebud Wristlet*. He teaches fiction writing at Youngstown State University in Youngstown, Ohio. The heartbreaking implications of the interactions between the living and the supernatural are hauntingly depicted in his first story for *Asimov's*.

Sy-l-vie! Syl-vie! Syl-vie!" her father calls through the hallways of the house. The ghost hunter's beautiful daughter sighs, wipes a tear from the corner of her eye, looks out the cobwebbed window of the attic. Sometimes it's the basement, sometimes the attic. Occasionally a house has a secret crawl space, and if she sensed it, she'd go there and wait with the creepy crawlies and spinning motes of dust. Through the false eyes of the portrait of a lady with her toy poodle sitting on her lap, she'd watch her father negotiate the living room, the swathe of his flashlight cutting through the dark. "Syl-vie! Syl-vie! Syl-vie!" he'll call—always call—until the ghost hunter's beautiful daughter finally says, "Here, Daddy. I'm in here."

"Sylvie," he'll ask, "my God, how do you do it? Tell me how to find you."

How does she do it? If only Sylvie knew, she would try to stop it from happening. The whispered calls, the bloody walls, the voice of a house, the way it told you how bad it was hurting. If she could turn it off, she'd gladly do it. She's had enough of houses, their complaints, their listing, the wreckage of their histories. If only she could be normal!

She peeked her head out the side of the false wall that time, waved, and he gasped. "Clever girl!" he exclaimed a moment later, his shock fading, replaced by a grin. He ambled over to put his arm around her and squeeze her affectionately while he admired the dark passage behind the deteriorating gaze of a two hundred-year-old society woman and her once white poodle.

He calls now, too. His voice comes from the floor below her. Upstairs is where this house's ghost lives, in the attic. They are so dramatic, ghosts, thinks Sylvie. If only they'd settle down, give up on whatever keeps them lingering, maybe their lives would get a little better. No more moaning in pain, no more throwing things around in frustration. No more struggling to get someone to notice you. Give up, thinks the ghost hunter's beautiful daughter. Why don't you just give up already!

"Here," Sylvie whispers. When her father calls again, she speaks louder. "Here, Daddy!" she shouts. "I'm up here. In the attic."

His feet thud on the pull-down steps until his head rises over the square Sylvie climbed through half an hour ago. The ghost here hadn't tried to hide from her like some. She hates that, the way some shudder when they see her, wrinkle their noses, furrow their brows—the way they disdain her very presence, as if they are saying, *You're not who I was waiting for. You're not the one I want.* This ghost, though, had few expectations. It had few conditions or requirements. It was an old woman, and old women aren't as picky as lost children, spurned lovers, old men whose sins were never forgiven, people who cannot bury hatchets, people who cannot bear to leave even after life has left them.

"Sylvie!" her father gasps. "Oh my, Sylvie, what have you found?"

The ghost is barely holding itself together. At first Sylvie wasn't sure if it was even human. It might have been some strange sort of animal. She's seen those before, though they're rarer. Afterward, they don't always know how to hold the shape they had in life. The old woman is gaseous; she probably doesn't even know what she's doing in this attic. Liquids are sorrowful, solids angry, throwing chairs and mirrors and lamps across rooms at their leisure. Gases, often confused, are usually waiting for some sort of answer. What is the question, though, Sylvie wonders. What don't you understand, old woman?

The ghost hunter nods at his daughter briefly when she doesn't answer, then goes directly to the old woman's figure in the corner. The old woman turns to look at him. Her face is misty. Wisps of moisture trail in the air behind her when she turns too quickly. She is like a finely composed hologram until she moves, revealing just how loosely she's held together. She looks past the ghost hunter, over his shoulder, to meet his daughter's gaze. Sylvie turns away from her to look back out the cobwebbed window. A long, wide park of a yard rolls out and away, trees growing in copses, with a driveway unspooling down the middle of everything, leading out through the wrought iron fence to the tree-lined road. This was her father's favorite sort of grounds to hunt—his favorite kinds of ghosts lived in places like this, usually. Sylvie can't bear to look back at the old woman. She knows what comes next.

There is the click, the sucking sound, the high moan of the old woman's ghost, and then the silence ringing in the dusty attic. Her father sniffs, coughs, clears his throat, and Sylvie knows it is okay to look now. She turns to find him fiddling with his old Polaroid camera, pulling the film out and waving it in the air until it begins to develop. "That's a good one," he says. "Not the best, but not the worst either." The old woman's ghost is gone. He looks up and sees Sylvie watching him. Blinks. Sylvie blinks back. "Thank you, sweetie," he says. Then: "Come on now. The Boardmans will be back shortly. We should get going."

The road is gray, the tree trunks are gray, the sky is gray above her. There are no discernible clouds, only drops of gray rain pattering down, speckling the windshield of her father's car as they pull away, and further away, from the haunted mansion. Sylvie remembers visiting the mansion once with her mother. In October. For Halloween. The mansion, one of many, sat in the historic district of one of those small Midwestern cities in one of those states with an Indian name. Each Halloween,

members of the community theater hid among the mansions and family cemeteries of the historic district, buried themselves in orangey-red leaves, covered themselves in clothes from the previous century, adopted slightly archaic ways of speaking. They were ghosts for an evening, telling stories to small groups of people—parents and children, gaggles of high school boys and girls who chuckled and made fun of their dramatic renditions—who had come on the Ghost Walk through the park and along the river, where once the people whose ghosts they now played actually had walked, loved, hated, drowned themselves out of unreciprocated affection, hid amongst the tombstones from abusive husbands, hanged themselves before the police came to arrest them. Her mother's hand holding hers, how large and soft it was, moist, how her mother's hand quickly squeezed hers whenever a ghost brought his or her story to a climax. "This is it, Sylvie!" said her mother's hand in that sudden squeeze. "Something wonderful or terrible is going to happen!" the hand told her.

Out of those park-like promenades of oak and maple lined streets they drove, back into the center of their shabby little city. Warren. Named after the man who surveyed the area for the Connecticut Land Company that pioneered the Western Reserve, Sylvie had learned in Ohio History class only a week ago. Before that, when someone said the name of the city, she had always thought of mazes and tunnels instead of a man who measured land. She misses picturing those mazes, those tunnels. Though the city is small, shrinking each year since steel left these valley people decades ago, it is tidy and neat, not maze-like at all. It's a city you could never get lost in.

Once past the downtown, on the other side of the city, the wrong side of the tracks but better than where they'd been living, her father likes to say, they stop at the Hot Dog Shoppe's drive-thru window, order fries and chili cheese dogs for both of their lunches, then continue on to the house Sylvie's father purchased several months ago. "An upgrade, Sylvie," he had said when he took her to the old brick Tudor with the ivy creeping up one of its walls. Much better than the falling-down house where they'd lived when her mother was alive. Sylvie still passed that house on her bus ride to and from school each day. That house could barely hold itself up when they'd moved out last spring. Now it really was falling down, leaning to one side unsteadily. The windows had all been broken by vandals and thieves now, people looking for leftover valuables. Not jewels or antique furniture. Copper piping, aluminum window frames and siding—anything they could turn in for money. They found nothing in that house, though. Sylvie's father had already stripped the place before others could get to it.

Inside he sits at the computer desk, as usual, one hand pressing the hot dog to his mouth, the other moving the mouse, clicking, opening e-mail. They'd had a lot of work in the past year, after word spread that her father could truly rid homes of lingering spirits, temper-tantrum poltergeists and troublesome ghosts. He'd built his own website after a while, and bought the new house. He was going to give her a better life, he told her. A better life than the one he'd had. Sylvie wondered why he spoke as if his life was already over. Her mother was dead. Her father was alive despite his deathly self-description. How could he not see the difference?

"Another one!" he shouts while chewing a bite of his chili dog. He grabs the napkins Sylvie has placed beside the mouse pad and wipes away the sauce that dribbled out while he spoke. "Listen to this, Sylvie."

Dear Mr. Applegate,

My husband and I have recently read in the newspaper about your ability to exorcise spirits. Frankly, my husband thinks it is bullshit (his word) but for my sake he said he is willing to try anything. You see, we have a sort of problem ghost in our home. It was here before we were. It's the ghost of a child, a baby. It cries and cries, and nothing we do stops it except when I sing it lullabies in what must have been the

baby's room at some point in this home's history. Sometimes we'll find little hand prints in something I might spill on the floor—apple sauce, cake batter I might have slopped over while I wasn't paying attention because I was on the phone with my mother or perhaps a friend. If it were only the hand prints, I don't think it would matter very much to us. But the crying just goes on and on and it's begun to drive a wedge between my husband and me. He seems to be—well, I'm not sure how to put it. He seems to be jealous of the baby ghost. Probably because I sing it lullabies quite often. At least four or five times a day. Sometimes I worry about it, too, when I'm out shopping or seeing a movie with a friend or my mother, and I'll think, How is that baby? I hope the baby is all right without me. I mean, it won't stop crying for my husband even if he was at home. The baby doesn't like him. And often he'll leave and go to the bar down the road when that happens until I come home and sing it back to sleep. We're not rich people, though, Mr. Applegate. And the prices I read on your website are a bit out of our range. Would we be able to bargain? I know it's a lot to ask, considering the task, but as of now we could afford to pay you eight hundred dollars. I wish it were more, but there it is. You're our only hope. Would you help us?

Yours sincerely,
Mary Caldwell

Her father laughs after finishing the e-mail. His smile grows long and wide. "Eight hundred dollars," he says, leaning over the keyboard. "Eight hundred dollars will be just fine."

"She sounds upset," Sylvie says. She sits on the couch in the living room where she can still see her father in the little cubby hole room he calls his office, and eats a French fry.

"She is upset, Sylvie!" her father says, turning around as his sentence comes to a close on her name. "And people who are upset are our bread and butter. Without them, we wouldn't have this fine new house, now would we?"

Sylvie looks up and around along with her father after he says this, taking in the rooms that they've both looked at a hundred times in just this way over the months since they moved in. Each time her father feels she doesn't understand how much he does for them, for her, for their better life, he'll talk about the fine new house and look up and around at the ceiling and walls of whatever room they're in, as if this is necessary to pay your respects dutifully.

"Well, I think it sounds sweet," says Sylvie.

"What does?" her father says. He turns back to the computer to begin a reply e-mail to Mary Caldwell.

"The baby," says Sylvie. "Why would they want to get rid of it?"

"It's not even *their* baby, honey. And even if it were, people just want to live a peaceful life. Ghosts make that impossible. Don't judge so harshly."

Sylvie drops her French fry on the plate. She stands up and excuses herself, and her father asks why she hasn't eaten all of her lunch. "I'm full," says Sylvie, and leaves the room, her chili dog half uneaten.

The crazy mumbler, the silly girl in pigtails, the annoying policeman who is always pointing his finger and shaking it, the rich woman in the fur coat and hat with the golden pin of a butterfly on one side, the confused dog who runs in circles after his own tail, the maid who is always offering tea or coffee, the old man dressed in a severe black suit with tails and top hat, his long white mustache drooping over the sides of his mouth and down his chin like spilled milk. Page after page, she turns through them until she comes to the new one, the one her father gave her before sitting down to eat his chili dog and open his e-mail. "Here," he'd said, holding the photo-

to by one corner as if it were the tail of a dead mouse, and handed it to Sylvie. "For the scrapbook. Keep her safe."

The old lady looks up and around the frame of the photograph, as if it is a fine new house for her, looks out at Sylvie, furrows her brow, then says, "Child, why have you done this? I thought we were becoming friends."

"It wasn't me," Sylvie tells her.

"She's telling the truth, my dear lady," the old man in the suit says from his page directly across. "It's not our young Sylvie here who has done this. It's the girl's father. The ghost hunter."

"Ghost hunter?" the old lady says. "Is that who flashed that camera at me?"

Sylvie nods.

"Well, I never. What sort of man goes around scaring the living daylights out of you like that? What did I ever do to him?"

"It's not you," Sylvie tells the old woman. "It was your son and his family. They moved into your place after you died two years ago. Remember?"

The old lady's face grows more pinched, more confused, her wrinkles deepening. "Why no, I don't remember that at all!" she says. Then: "Wait. Oh, yes. You're right. They *did* move in, didn't they? I am dead, aren't I?"

Sylvie nods again, trying to look sympathetic. She hates when ghosts realize they're ghosts.

"Give her some time, Sylvie," the old man with his milk-flow mustache says. "It would be better if you just let me talk to her."

Sylvie knows the old man is right, and turns the pages back and back and back again until she comes to the first one, the very first ghost her father captured. The very first entry in Sylvie's album. "Hi," she says, her voice almost a whisper, smiling as soon as she sees her mother's smiling face.

"Hello, my big girl," says her mother.

There are, perhaps, a few things that should be mentioned about Sylvie's mother before we go any further. Her name was Anna Applegate, but she was born to the Warners, one of Warren's well to do families that had kept their ties to the city, even after the manufacturing industry fled to poorer nations. Most of the wealthy had gone with their corporations, or had never settled in the communities who worked for them to begin with, but the Warners had a particular flaw, a flaw that only revealed itself in the receding tide of money: the Warners sometimes showed that they had what some people called "heart" or "feelings"—both enemies of profit, and because they had kept their modest wealth invested in the city, and lived among the people who worked for them, over a period of several decades they eventually "came a cropper," as Anna's father liked to tell friends and colleagues at the university in the neighboring city of Youngstown. He was an art historian—a dreamer and a good for nothing, his own father had called him as they had begun to feel the burden of becoming people who were required to think about money in relationship to need for the first time in several generations. He was fond of sayings, phrases, and aphorisms from the past. He had a difficult time caring about anything that distracted his gaze from beauty. His family had lost their wealth, but he had not lost the sorts of desires wealth had once afforded them.

Sylvie's mother had inherited the Warner flaw of heart, and because of this she married Sylvie's father, a young man whose careers had ranged from convenience store clerk to selling cemetery plots to working in a cabinet factory by the time he'd turned twenty. She had married for love, and love led her into a falling-down house with her new husband, already carrying a child. And though the Warner family had come down the ladder, they had not come down so far that they would approve of

Anna marrying such a man. "What kind of life can he give you?" her father had asked in the front room of their family mansion that was always cold, even in summer.

Anna had said, "Why does it matter what he can give me? What can *I* give *him*? What can we give each other?"

Her father had pursed his lips, closed his eyes and sighed, knowing sense would not reach her. He turned, lifting his hands in resignation, and left Anna standing under the candelabra with the wide staircase curling up on either side of the room to the second floor. She shivered for a while in the cold draft that came through the hallways. Then she made a decision. A decision that would take her to Sylvie's father's family home, into the ramshackle section of unemployed laborers and their raucous families, where Sylvie would be born eight months later.

"Hello, my big girl," says Anna. Sylvie wishes she could hug her mother instead of just see her and talk to her in the photo. It's been so long since she felt her mother's arms around her. Her father's hugs are tight and hot, but her mother's felt like spring mornings, light coming under the window shade, the smell of growing things pushing their way up and out of the earth.

"Hi, Mom," says Sylvie, though she's not sure what else to say. How many times has she opened this book of dead people just to look at her mother? Just to say hello? It's hard to have a conversation now that her mother's dead. Sylvie keeps on changing, but her mother will always be who she was when that picture was taken. She will be like that forever.

"What did you do today?" Anna asks. "I thought I'd see you this morning, but it's already afternoon."

"Dad had a job. At the Boardman mansion. She's at the back of the book with Mr. Marlowe. He's explaining everything to her now."

Anna sighs and shakes her head, leaning against the border of the photograph. "Your father is doing well then?"

Sylvie nods. "He got another e-mail today, too. A baby ghost. Guess it's crying too much for the woman's husband."

"I wish he would stop," says Anna.

"I wish he would too," says Sylvie.

"I wish he'd never found out what you can do," says Anna.

"I don't mind, I guess," says Sylvie. "I mean, I just wish he would stop. That's all."

"Did you do your homework?" her mother asks, trying not to appear too obvious in her switching of the subject. Sylvie nods, then shrugs and says no. "You better do that, honey," says her mother. "I know it's hard right now, but you have to keep studying."

"What good is it anyway?" says Sylvie. "You're smart. Where did it get you?"

"Don't say things like that, Sylvie."

"I'm sorry, Mom," Sylvie says. "I just wish you were here. I mean, really."

"So do I," says Anna. "But you need to be strong, okay? I need you to be my big, strong girl."

Sylvie nods, even though she is neither big nor strong. She kisses her mother's picture before closing the album and putting it aside to do her algebra homework. She's fourteen, neither big nor strong, but she can at least do algebra for her mother.

While Sylvie does her homework, while she watches a movie about rich warlocks taking over a town their great-grandfathers founded long, long ago, while Sylvie showers and walks around with her hair wrapped up in a towel like a beehive, while she puts herself to bed and falls asleep, while she dreams she is trapped in one of those police department rooms where people can see in but you can't see out, the ghosts in the photograph album gossip, debate, inform the new ghost—the old

woman, whose name is Mrs. Clara Boardman, formerly of the Boardmans of Warren, Ohio—about the general condition of her recently transformed existence. Mrs. Boardman is outraged to discover that Sylvie's father believes he has freed her from ghosthood, that she's now resting at peace in some place people imagine to be heaven. "Only Sylvie can see and hear us then?" she asks.

The other ghosts murmur or mumble their confirmations, but Mr. Marlowe adds, "Well, the people we were haunting, too. They could see and hear us, of course."

"It's why the ghost hunter's business is doing so well," adds the annoying policeman, who only the crazy mumbler can see is angrily pointing and wagging his finger as he speaks.

The rich woman in the fur coat and hat with the golden pin of the butterfly on the side of it says, "They're no longer crazy once Sylvie sees the ghosts, too. When she's nearby, she makes us visible."

"Hence the photos," says Mr. Marlowe.

"Hence this album," says Sylvie's mother. "I'm sorry, everyone," she says. "I'm afraid I'm the one who started all this."

"Not at all," says Mr. Marlowe.

"It's not your fault," the mumbler says.

"You didn't make him capture you, or any of us," says the police officer.

The little girl with pigtails jumping rope smiles across the page from Anna. The dog chasing his tail barks twice. Anna sighs despite their effort to buoy her spirits. "I don't know," she says. "If I'd never haunted Sylvie, she might never have been able to see the rest of you. That could be enough reason to lay blame."

"Pish posh," says the rich woman, tugging at the collar of her fur coat. "Don't be silly, dear girl. You could never be blamed for this. It's not as if you're a magician who's given away trade secrets. Ghosts have a right to haunt, now don't we?"

"Well said," says Mr. Marlowe, and the dog chasing his tail barks once again.

Their voices seep out of the album while the ghost hunter's beautiful daughter sleeps. All night long she hears their voices without comprehending them; they are like songs teenagers hear in the buds of their turned-down-low iPod earphones while they dream. They make sense to Sylvie while she is sleeping, but in the morning, when she wakes, they fall away from her memory like sand through spread fingers.

At school Sylvie enjoys a sort of fame that she had never felt before her mother died. Since the journalist from the *Warren Tribune* interviewed her father, everyone knows he can get rid of ghosts. Sylvie had read the article like anyone else ten months ago, in the Sunday edition. At first she'd been confused. Why had her father allowed a reporter to interview him? But quickly she came to understand that it was money. Money was almost always the reason for anything her father did, probably because he had so little of it.

In the article, he is quoted as saying, "After seeing how much it upset my daughter, after all my family and friends told me I was delusional, I decided to buy the equipment necessary to help my wife on her way to the afterlife."

This is the part of the interview Sylvie hates most. How he lied about her being upset. And the end of the article announcing that he could do this for others, that it was a service he could provide.

When she arrived at school the next day, everyone was waiting with sad eyes and invitations to parties or sleepovers. They believed she'd been through hell and, though many of them had never been haunted, enough had and now they were talking, sharing secrets, surrounding Sylvie with their stories of grief and torment. She'd understand, they thought. She knew the horror.

But Sylvie hadn't been horrified. She had loved seeing her mother walk around

the same rooms she'd walked in when she'd been living. It was almost as if she wasn't dead. True, she could no longer touch her mother, but she could see and hear her, and sometimes she thought she could smell her perfume, *Eternity*, but she realized that was just a lingering memory after she started to see other ghosts. Ghosts don't have a scent, she now knows. Not unless you can remember what they smelled like when they were living.

So it had only been Sylvie that saw her mother at first. Her father didn't tell the reporter that. And then one day he had come home from working at the cabinet factory early with a stomach ache, and found his beautiful daughter in her bedroom of their slanted, narrow house, talking to his dead wife.

Sylvie had kept it secret until that day, which was also the day she realized others could see her mother if she didn't take precautions: arrange for times when she and Anna could sit and chat like nothing had ever happened. When her father saw, though, he told everyone, and everyone had patted his back and consoled him while disbelieving. For months afterward he complained to friends and relatives that his wife was haunting him and his daughter, and for months friends and relatives made sympathetic faces, nodded politely, placing a hand on his forearm or putting an arm around his shoulders as they walked through the park, saying things like, "My mother thought my father was haunting her for a while after he died. Don't worry. It's just a phase."

He had been outraged by their belief that he was just another ordinary mourner. He had seen his wife standing right in front of him, talking to his daughter. It was no intimation, no product of his imagination. He could see her, speak to her, when Sylvie was in the room. But his friends and family would only bat their lashes while they pondered polite responses, trying to consider how to help him through his grief. *How must Sylvie be handling this, they wondered, if this is how Richard grieves?*

And then, as he said in the article, he found his father's old Polaroid camera and took a picture of Anna. He'd prove what he saw. He hadn't realized that, when he snapped her picture, she would disappear. He received his proof in the photo that she had been there, but when he looked at it, she was still as stone and no longer talking. Sylvie had cried and cried, curled her fists into balls and beat his chest until he grabbed her wrists and stopped her. "You killed her!" Sylvie screamed.

"No, Sylvie," her father said, "the cancer did that."

Later, her father gave her the picture to keep, after having passed it around to friends and family to prove his sanity.

It wasn't until he gave the picture to Sylvie, after he was through with it, that Anna spoke again. "We can't let him know about me this time," said Anna. And Sylvie, who had been crying, nodded and said, "I'm sorry, Mom. I'll be careful this time. I won't let him know you're still with us."

In the newspaper interview, her father had done something that Sylvie's mother said was noble. He had lied about how it was Sylvie who made his wife visible. He didn't admit that he'd never been able to see her without Sylvie nearby. He said nothing about the camera. He had told the reporter he'd bought the usual ghost hunting equipment for the job: infra-red temperature gauges, negative ion detectors, Geiger counters, electromagnetic field sensors. He owned a few of those things now, for props. He had protected Sylvie.

"Dislike what your father's done," Anna told Sylvie, "but don't hate him. His intentions were good."

Now Sylvie is popular. Previously she'd been just another poor white girl who hadn't learned how to fight, avoiding everyone, head down, watching her feet pull her through the hallways of Western Reserve Middle School. When she gets off the bus now, there is always someone waiting to walk and talk with her in the hallways.

"Did your father catch any ghosts this weekend?" Ariel Hyland asks during lunch on

Monday. Ariel is probably the darkest-skinned black girl in Warren Western Reserve Middle School. For years she and Sylvie have shared a bus seat, talked in a minimal way about each other's families, but other than that, the girls barely know each other.

Sylvie nods. Tells Ariel about the Boardman mansion. The girls and boys that line up on the benches of her table lean in to listen closer. They are always waiting to hear about another ghost, another capture. Sylvie's father is famous. He's been the lead story for *Ghost Hunter Monthly*. He's been invited to Pittsburgh to rid a hotel of a spirit that's stalked the place for four decades. What he's waiting for is a call from Hollywood, asking him to do a show. Sylvie tells the other students enough to satisfy their curiosity. But it's never enough. Even after she finishes telling them about Mrs. Boardman, how she had offered Sylvie tea when she came upon her in the attic, how nice she had seemed about being found, even after it is clear Sylvie will tell no more and changes the subject to the Ghost Walk that's coming up next weekend and would anyone like to go, they eye her greedily. They have no interest in community theater actors who just pretend to be dead. Only real ghosts matter.

Having made plans to attend the Ghost Walk on Saturday night with Ariel and a few of the other lunch table crowd, Sylvie starts to worry. For months she's tried to pretend her new fame will disappear, that at some point she can go back to being nobody. She doesn't know how to tell who really wants to be her friend and who wants to hang around her because of her father's escapades. She likes knowing where she stands. There are girls who leave letters in her locker now, telling her about their own ghosts. There are boys who come up to her at her lunch table and offer her trinkets of misplaced affection: photographs of glowing lights in their back yards they've taken, DVDs of *Ghostbusters* or *Casper*, once a silver charm bracelet with tiny, ghostly faces dangling from it. Before, when her mother was still alive but sick and losing her hair and refusing to take money from her family for a better doctor, for better treatment—and even before that, when Anna refused to take money for a college education from her father the art historian, because he'd offered it like she was just another charity organization after marrying Richard, and she would rather live and die working at Wal-Mart, as her mother once said—Sylvie had had few friends. Ariel Hyland hadn't been what she considers a real friend. Ariel had talked to Sylvie, but had never befriended her in a way that made Sylvie feel *known*, the way a true friend knows you, the way Sylvie's mother knows her. But still, out of everyone at Western Reserve Middle School, Ariel is the closest thing she has. She'll stick close to Ariel on the night of the Ghost Walk, she decides.

"That's a good idea," Anna says when Sylvie confides in her. Sylvie tries not to burden her mother with her own problems, but sometimes she can't help herself. She tries to be big, to be strong, but sometimes she just wants her mother. "It's good that you have friends, Sylvie," says Anna. "You can't hide from the world forever."

"It isn't hiding," says Sylvie.

"What is it then?" Anna asks from the front page of the photo album. In the background Sylvie's dresser is pressed up against the wall of her bedroom in their old falling-down house, her old mattress thrown down on box springs that have been thrown down on the scratched-up hardwood floor. It's where Richard took her picture with the Polaroid months ago. Haunting Sylvie's bedroom, as usual.

"It's refusing," Sylvie says. "I'm not hiding from the world. I'm refusing it."

"But why, honey?" her mother asks. It's times like this that Sylvie finds herself annoyed with Anna, like most girls at school act annoyed with their mothers. Whenever Sylvie admits that she doesn't love the world or life as much as her mother loved it, Anna begins to nag like any mother. "There's so much out there for you, Sylvie," says Anna. "Don't refuse the world. Embrace it."

"Mom," Sylvie says, "whatever's out there isn't you. I love you, but can we drop it?"

The church where Sylvie and Ariel meet the others from their lunch table is on a corner of courthouse square, all lit up on this October evening, leaves tumbling end over end across lawns, scraping across the sidewalks like the severed hands of zombies. Sylvie has always been a fan of Halloween—her favorite movie is *The Nightmare Before Christmas*, her favorite candies are those little sugary pumpkins, her favorite colors: purple, orange, and black—and now it all seems a little ironic to her as she stands in the front room of the First Presbyterian Church sipping cocoa with Ariel and five of their cafeteria friends whose parents have dropped them off or sent them on their bikes with enough money to buy a ticket to the realm of the dead for the evening, making them promise to be back by ten o'clock.

An older woman comes over to ask if they're all part of a group or willing to mix with other travelers along the River Styx this night. Everyone laughs or smiles; she's obviously excited to call the Mahoning River the River Styx and to use grammatical constructions like "this night" to her heart's content. No one answers her immediately, so Sylvie speaks up. "We're going together if possible."

"All righty," says the old woman, who smells exactly like the church smells, Sylvie notices, a little musty and a little like Avon perfume. "Then go ahead and wait outside on the front steps. Your guide for the evening will meet you shortly."

Ariel says she's getting a refill of cocoa—"The damn ticket for this cost so much," she says, "might as well get my money's worth."—and everyone agrees. Their Styrofoam cups steaming with cocoa again, they wander out to the steps, which are wide and steep and face the tree-lined road of mansions their guide will take them down. They wait, sipping, discussing the potential the Ghost Walk has for being incredibly cheesy. "Too bad your dad's not here, Sylvie," a boy named Aaron says. "I bet he could tell better stories."

"Ghosts are ghosts," says Sylvie, shrugging.

The clatter of hooves on pavement distracts them. A horse-drawn hearse lit up with lanterns on each of its corners is coming down the street. The driver is headless, they see, when he pulls the hearse to a stop. Ariel asks how he manages to drive the horse if his head is really stuck down in his shirt. "Probably see-through," says Aaron.

"Or maybe there are little holes they cut in the shirt," says another boy, Patrick.

"Or maybe," says Sylvie, "he's dead but able to see without a head." No one says anything at first. They all look at Sylvie as if she could be the anti-Christ. Sylvie laughs. Then they all laugh. She's surprised them by being funny. Now she seems a little more like them. She's not just the ghost hunter's beautiful daughter.

The headless horseman turns to them and waves his gloved hand to follow. He tells the two horses to walk along, and Ariel says, "I heard his voice down in the middle of his shirt. He's got a head in there all right."

They follow the headless horseman's hearse, and at the street corner they find a woman wearing a black cloak. The headless horseman turns the horses down the street to come back around to the church and lead another group to this same spot. The woman in the cloak tells them that she's their guide now. She's tall and willowy with red hair curling out from her hood. She smiles, looking at each of them for a moment. "Everyone ready?" she asks. Everyone nods. "Well then, let me warn you before we begin our journey, there are some pretty scary ghosts out tonight, so stay together." The boys laugh, the girls smile. The woman wearing the cloak rolls her eyes at them and grins. Then she turns and they begin following her down the tree and mansion-lined sidewalk.

Sylvie has already been in several of these mansions, has already found several ghosts in them for the families that own them. The families that still live in the his-

toric district of Warren are some of her father's best customers. They're gone for the evening, so the Ghost Walk can be held without the living passing by windows to go to the bathroom or sitting down at the table to eat dinner while townspeople gather outside. Sylvie has heard some of the stories already. The mad doctor who built his mansion with a pit in the basement and a trap door on the front porch. One pull of a switch and you fell into his dungeon where he'd perform experiments on you and you'd never be heard from again. The wife whose husband beat her, so she ran away to live in a nearby cemetery because her husband feared the dead and wouldn't go there to get her. The lawyer who hangd himself from his porch because he'd killed a man who came to collect a debt. The actors' faces are powdered white. Moonlight glows on their cheeks and foreheads. But their cloaks and old fashioned dresses and suits don't seem nearly old enough to look authentic. It's better than real ghosts, thinks Sylvie. Better than watching them disappear when her father takes their pictures.

At the Jacobs House, Ariel leans close to Sylvie and whispers, "Who's that guy?"

Sylvie looks at Ariel, who nods at a middle-aged man in an old black suit standing next to their circle, listening to the Jacobs ghost tell her story. Sylvie shakes her head. "I don't know," she says. "Another actor?"

The man turns and looks at Sylvie as the Jacobs ghost finishes her story of eternal love for a boy who died before he could marry her, of how she drowned herself in the Mahoning River to join him. The man in the black suit nods at Sylvie. He has a strange beard, like Mr. Marlowe in her album, pointy and black with two lines of gray down the center. Skunk stripes. Sylvie nods back. Then their guide ushers them on to the next house. Sylvie hangs back until everyone is slightly ahead, and the man in the black suit falls in step beside her.

"Lovely night," he says. Sylvie nods again. "Are you enjoying the Ghost Walk?" he asks her.

"It's fun," she says, noncommittal, looking ahead at the others.

"But you've seen ghosts before. Other ghosts. *Real* ghosts. This is nothing for you." Sylvie stops and looks at the man, hard. "Who are you?" she asks.

"You don't know me, but I know you," the man says. His voice sounds gravelly and vaguely British. His face is lined with acne crevices, but she can tell he's not as old as his scarred skin and pointy beard make him look. "Your father is the ghost hunter, isn't he?"

"That's right," says Sylvie. "What about it?"

"I want you to give him a message," the man in the black suit says. "Tell him he's being watched. Tell him perhaps he should put that camera down before someone gets hurt. Perhaps himself. Or perhaps his daughter, for example. Tell him some of us can do more than haunt. And we would hate to see such a bright young girl like yourself fall down a staircase in one of these old mansions. I hear some of these places aren't as safe on the inside as they appear."

Sylvie narrows her eyes. The man smiles and performs something like a little bow, holding one hand against his chest. "You're lying," she says. "Ghosts can't touch." She knows this because if they could, she and her mother would have always been hugging.

He takes her hand in his and bends to kiss it. It's cold to the touch, and solid. Sylvie flinches and takes a step back toward the edge of the street.

"Sylvie!" Aaron calls from nearly a block away. "What's the hold up?"

"Nothing!" she shouts over her shoulder. "Coming!"

She's already decided she will ask the man in the black suit how he did it, how he touched her, if it's because, as she sometimes worries, she spends more time with ghosts than living people, if it's because her father keeps asking her to find them, to see them, to talk to them. But when she turns back to question him, he's gone. Nothing is there but the wind pushing leaves across the sidewalk.

At home her father asks if she had a good time. "Good enough," says Sylvie. "But there was a man there. I think he was a ghost."

"What sort of man?" asks her father, spinning away from his computer on his desk chair to face her. "What sort of ghost?"

"It was weird. He could touch me. He took my hand and tried to kiss it."

"Sylvie," her father says, red flags waving in his voice, "did he hurt you in any way?"

"No, it wasn't like that. I pulled away from him and this kid Aaron yelled to ask why I was lagging behind. I turned to tell him I was coming, and when I turned back, the man was gone. He said he was a ghost, and that you'd better stop hunting them."

"Ghosts can't touch people, Sylvie. You know that."

"But he did," says Sylvie. "I can still feel the cold on my hand where he held it."

Her father stands and comes to inspect her hand, holding it in his own like something broken that needs to be fixed. When he touches her, Sylvie begins to feel warmth in her hand again, but her father says, "It's like ice."

"You should stop, Dad," says Sylvie. "He said something else. He said he'd hate to see your daughter fall down a staircase in one of those mansions."

"Sylvie, Sylvie, Sylvie," her father whispers, pulling her into a hug, holding her, his arms wrapped all the way around. "You're tired, that's all. Whoever this man is, he's not dead. The dead can't touch us. He's probably some wacko. We have to keep an eye out for people like that."

"You can do something else," she says into his fuzzy wool sweater. "You can get a different job and then they'll leave us alone."

"Honey!" her father says, pushing her out at arm's length to look at her. "This is the best we've ever been able to do. The best we've ever lived. There's no reason to be afraid of a ghost. Besides, if he comes around, we'll take his picture. See how he likes that."

"You shouldn't be doing this. Mom—"

"Maybe you shouldn't bring your mother into this, Sylvie. It's been over a year now. I think it's time to move on, don't you?"

Sylvie shakes her head and sniffs, realizing she's about to start crying. She pulls away from her father and folds her hands under her arms, nods, and walks upstairs to her bedroom where the ghosts in the photo album are mumbling, conversing, skipping rope and barking, gossiping and reasoning. Sylvie opens it to talk to her mother, but when she pulls the cover back she sees her mother is asleep on the mattress on the floor of her old bedroom, her breathing even, her chest rising and falling. She looks so peaceful. Sylvie could wake her, but she decides to get through this on her own. "Good night, Mom," she whispers. Then gently shuts the book.

"You'll have to excuse me. I didn't expect you all this early," says Mary Caldwell when Sylvie and her father arrive at the Caldwells' the next morning. It's ten AM and Mary Caldwell is in the side yard burning trash in a barrel when they pull up her long, gravel drive. Smoke rises into the air in long dark tendrils beside her. The Caldwells aren't usual customers. They live in an old farmhouse on land where there's no longer an actual farm, in a township called Mecca. Years ago it was sold off, piece by piece, Mary Caldwell tells them as she invites them in to sit in the living room for coffee, leaving the barrel burning behind them. So now the land that was once the farm has other houses on it. Mary Caldwell's husband has gone to a bar down the road, a place Sylvie noticed when they drove around the town circle. The Hole in the Wall. Mary Caldwell's husband is often there, she tells them. He's a friend of the owner, but mostly he's always down there because he can't stand being inside the house with the baby. "I mean the ghost," says Mary, blushing. "We don't have any children of our own."

"I understand," says Sylvie's father. "We'll take care of everything, rest assured. In fact, you should probably join your husband. It's better if we're left alone to take care of the matter."

So you can't see how we do it, thinks Sylvie. But she holds her tongue. Mary Caldwell sits up straight in her chair, puts her hands on her thighs and breathes a long sigh, as if she's entered a yoga position. "Thank you," she says. "But please, it won't be painful for the poor thing, will it?"

"Of course not," says the ghost hunter. "Think of it as releasing a lost soul. I'm sure it's simply confused about the state of its being."

"Yeah, probably," says Mary Caldwell. Sylvie likes Mary Caldwell. She likes the man's flannel shirt she's wearing, the way she hasn't done much with her hair but it still looks real nice, wavy, and that she doesn't wear any makeup but somehow still looks soft and pretty. That was how her mother used to be. Mary Caldwell catches Sylvie staring and smiles. "Would you like to come with me, honey? We could drive on out to the mall. I'm sure the whole thing must terrify a young girl like yourself, doesn't it?"

"Actually, Sylvie is my assistant," says the ghost hunter. He turns to Sylvie and smiles. "And it's not so terrifying an experience, really. Sylvie has seen other ghosts, obviously. Does it scare you, Sylvie?"

"No," says Sylvie. "It's not scary. Just sad."

"What do you mean?" says Mary Caldwell, her brows furrowing in alarm now.

The ghost hunter takes over. "She means simply that it's sad to see ghosts stuck here, instead of where they should be."

"Oh," says Mary Caldwell. "Well, yes, I can see that's certainly a sad thing. I'm always thinking that way about the baby. Wanting to help it somehow. I hope this is the right thing."

The ghost hunter assures her it is. He asks Sylvie to show her the photo album. Sylvie takes it out of her backpack and shows Mary Caldwell pictures of ghosts, flipping from page to page while Mary Caldwell nods and mmm-hmms. Her father says, "These are all ghosts we've been able to help on their way." Sylvie doesn't show Mary Caldwell her mother. She shows her Mr. Marlowe, who plays with his mustache and snickers, though only Sylvie sees and hears him. She shows her the little girl skipping rope and the dog chasing his tail.

"Well, then," says Mary Caldwell. "All of these folks seem happy, I suppose."

"That's right," says the ghost hunter. He inquires about the form of payment, and Mary Caldwell pulls a folded envelope from the back pocket of her jeans and hands it to Sylvie's father. The ghost hunter accepts it appreciatively and leads Mary Caldwell out her door to the porch, down the steps to her car, where he shuts the door for her and waits in the drive until she's backed out onto the road and is on her way to the Hole in the Wall to meet her husband. After she's gone, he returns to the living room and says, "Okay, Sylvie. Where can we find this baby?"

Sylvie begins walking through the house, looking around, picking up snow globes, which apparently Mary Caldwell collects. They are everywhere Sylvie looks, on shelves and tables, on the hutch in the dining room. She picks up one with the Statue of Liberty inside it and shakes the globe, stirring the snow. She wanders up the wooden steps of the farmhouse to the second floor, leaving her father in the living room below. She peeks in doorways as she passes by them, the master bedroom with the unmade bed, the guest bedroom where everything is neat and tidy, the sewing room, where everything is a bit disorderly, pieces of fabric, spools and thimbles and pincushions tossed on a worktable and in baskets littered on the floor. When Sylvie is about to leave the sewing room to check out the bathroom, she hears the first cry.

Angry but tiny, it comes from behind her. She turns around, and the cry comes

again, then again. The voice does not seem to come from any one place in the room, but from the room itself, as if from every nook and cranny. "Hello?" Sylvie says. "I know you're here. Why don't you come out? Let me see you."

The baby's cries grow louder and faster, as if it's throwing a tantrum or suffering from colic. Sylvie coos to it several times, coaxing, and finally, suddenly, it appears on the worktable next to the sewing machine. It's so tiny! It wears a cloth diaper that's actually pinned. Its face is red and squinched up, as if it's in pain, and she goes to it, picks it up and says, "Hey now, hey now. No need to cry, baby." The baby's cries stretch out like taffy, but a silence grows between them, longer and longer, until it gives up and looks up into her eyes and quiets for good. Sylvie smiles, then realizes she's actually holding it. "Oh my God," she says. "You're like him. The man in the black suit."

The baby blinks twice, then fades away, leaving Sylvie holding nothing but empty air.

It reappears on the worktable a minute later, crying again. She goes to it, picks it up and tries to sing it a lullaby. Slowly, surely, it quiets again. "You're playing with me," says Sylvie, and the baby giggles and makes a handful of sounds like vowels.

"Excellent, Sylvie," her father says behind her. She turns quickly, still holding the baby in her arms. "You weren't lying. I can't believe it. You can touch it."

"I told you," says Sylvie. "I told you what the man said. You've got to stop, Dad. I have to stop."

Her father lifts the Polaroid to his eye and Sylvie spins around as it flashes behind her.

"Sylvie!" her father says. "What's the matter with you?"

"You can't, Dad. It's just a baby. And they're not gone. You know that."

"This is nonsense, Sylvie," her father says, his camera arm going limp beside him in exasperation. But Sylvie won't turn around. She curls herself over the baby as if any bit of it is exposed, the Polaroid might snatch it from her. "Sylvie, show me that baby," her father demands.

"Hide," she whispers to the baby. "And don't come back. You've got to hide, okay?"

The baby begins to disappear just as Sylvie's father places a hand on her shoulder and spins her around. "Stop this," he says, and then, when he sees Sylvie isn't holding anything at all, says, "What did you do, Sylvie? Why are you being so stubborn?"

Just then the baby begins crying again. Sylvie looks over her shoulder at the worktable. There it is, plopped down next to the sewing machine. Her father lifts the camera and snaps the baby while its mouth is wide open, screaming. The scream is cut short, replaced by a hissing sound, air leaking out of a balloon. The ghost hunter retrieves the picture, waves it in the air, and with each flick of his wrist the baby wavers, fading on the worktable, until it disappears. When her father hands the photo to her after it's developed, the baby's in the picture. Still screaming. "Dad," she says. "I don't want to do this anymore."

"Sylvie, it's not a question of want. It's a question of need. You need to do this. I need you to do this. Just settle down and let's talk about it."

But even though he's saying let's talk about it, Sylvie can see that her father the ghost hunter really means, let's get over it, let's you listen to what I have to say and do as you're told, let's just follow my lead, okay? Sylvie wonders if this is how Anna's father the art historian made her feel about the choices she made. She shakes her head and steps past him, leaving the sewing room and him behind saying, "Sylvie? Hey. Where are you going?"

She trots down the steps and picks the photo album up from the coffee table in the living room on her way out the front door. Her father appears on the landing of the second floor. "Honey?" he says. "Sylvie, stop. Where are you going? What are you doing?"

Sylvie doesn't look up at him, doesn't say anything. She runs down the porch steps into the side yard to the burn barrel. The fire is lower now but still going, the smoke not as thick but still smoking. She opens the album and places the baby's photo beside her mother's. Her mother says, "Sylvie, what's going on? What's happening?"

"I'm going to help you, Mom," says Sylvie. "I love you."

She closes the book before her mother can get another word in and holds it to her chest, closes her arms around it, hugging it as tight as she can. The ghost hunter appears on the steps of the farmhouse. "Sylvie!" he shouts. "What are you doing?"

She holds the book out, dangling it over the fire, as if it's suddenly too hot, too dangerous. Smoke poofs up in a cloud from the burn barrel, and Sylvie imagines the album landing in the flames, catching a moment later, the plastic sizzling on the pages, the cover slowly browning, crisping to a dark charcoal. She imagines a hissing sound escaping from the fire, slowly, slowly like it does when her father's camera captures a soul and out comes the picture, developing in mere minutes. She imagines the smoke pouring forth in dark tendrils, streaking the air above. A popping, then snapping, as the fire grows. Then from the flames they will come, riding the smoke up and into the pale October sky like kites that have been let go. The dog barking, the baby crying, the little girl skipping her rope up and up and up, the mumbler mumbling, the rich old woman and Mr. Marlowe and Mrs. Boardman all quite startled, the cop wagging his finger at her as he floats up behind them. Her mother, too, looking down at her, smiling. "I love you, Sylvie," she'll say, blowing a kiss with one hand as she holds out the other as if she's trying to reach her, to touch her one last time, and is gone the next instant. All of them. Gone, gone, gone.

"Stop!" The ghost hunter shouts as he runs down the porch steps, coming toward Sylvie where she's holding the photo album over the flames in the barrel. "You don't know what will happen if you burn those!"

Is he right? Will what she hopes for not be the thing that happens? Will she have done the stupidest thing in the world if she drops the photos in the flames? The pictures burn, the end, finished. No smoky ghosts riding the wind to heaven. She'll never see her mother again. And for what?

Sylvie's crying. She realizes this only after her father puts his hand on her shoulder when he reaches her, his face turned up to the sky where a moment ago Sylvie had been looking, imagining them soaring off and away into nothing. "Sylvie," he says, his voice low and serious.

She shakes her head, though. "I won't help anymore," she tells him. "I don't want to be a ghost hunter's daughter."

"Don't be like that, Sylvie," he tells her. "Remember your mother—"

"This isn't about Mom," says Sylvie. "Or at least it's not just about her." Sylvie puts her hand out and takes hold of his, squeezing tightly. They're warm to the touch, both of them. She thinks she can feel his pulse beating just there, where her thumb presses against his wrist. The baby's cries still ring in her ears. Somewhere Mary Caldwell is sitting on a bar stool, crying into a beer she's ordered before the bar even opens, even though she usually doesn't drink, while her husband watches a football game on the TV in the corner over the cash register. Somewhere someone is reading a magazine article about her father, about her father's ability to rid people and places of ghosts. Somewhere a pointy-bearded man wearing a black suit is stalking the leaf-strewn sidewalks of Warren, Ohio. Sylvie hopes he won't hurt her father, now that she's made a decision for both of them. If she stops finding ghosts, he won't be able to capture them. She laughs and cries, happy and mad all at once. She's not sure which to feel, or if it's all right to feel both. But she takes the album away from the fire and holds it to her chest. "This is about us," she says, before squeezing her father's hand so tight no wind could ever take him from her. O

THE HEDGE WITCH'S UPGRADE

*(The world's longest herbaceous border, Castle Dirleton, Scotland,
Guinness Book of World Records)*

Since menopause I've been
a hedge witch. You know the type—
mostly muffin-shaped woman babbling
about herbal remedies and felicitous
moon phases for planting tomatoes,
liminal lady hedged at the edge
of the orderly village and the unruly wild;
and ever since I saw the world's longest
herbaceous border, I've wanted one.

Supposing it mostly a matter
of redefinition, for my fifty-ninth
birthday, I conjured a reframing,
linguistically transforming overgrown
perennials into herbaceous borders,
thereby entitling me to an upgrade:

Borage for courage, lavender
for sleep, lemon balm for calm,
passionflower . . . savory for saving
me from sorrow with power
to draw me underground. Gardens
are an outward manifestation
of a gardener's potential for inner beauty.

It is summer; warm earth pleasures
my bare feet. I have seeded the soil
with my sweat. My heliotropic heart
pumps sun. Let it be known I'm
a witch of curvaceous borders, thus
affording the ruined castle of my past
a certain elegance and nobility.

Then yesterday on meeting a charming
little frog in transit past the green beans,
I explored other skills.
The rest is mulch and mystery.
Unlike hedges, herbaceous borders
aspire to greatness and that takes care:
so hop to it, Prince; snap dragons
need heroic action. Ever after starts now.

—Sandra Lindow



DEADLY SINS

Nancy Kress

Nancy Kress's most recent book was *Steal Across the Sky* (Tor, 2009), a science fiction novel about an ancient interstellar crime. As a change of pace, she is currently writing a YA fantasy. "The story that follows is yet another change of pace, in which religious fanaticism meets high-tech innovation. Some things change but—as the Church well knows—others do not. And possibly never will."

"Tell me what happened," the wall said, "from the beginning."

Renata turned away, toward the other wall.

"This cell enjoys attorney-client privilege. You can talk freely. If you don't tell me exactly what happened, the legal team will find it difficult to prepare your defense."

"I don't want a defense. Go bust a circuit board, counselor."

"I am not an attorney," the wall said stiffly. "I'm a paralegal, entrusted with recording and analyzing your initial statements. Your attorney will be here later. And the sixth amendment of the Constitution guarantees every accused a defense."

Renata laughed. The jail smelled of piss and sweat. Her nose tingled. "Shove the Constitution up your grandmother's vacuum tubes."

The wall's voice hardened. It produced the image of a face. "Did you murder this man between midnight and two AM this morning?"

She stared at Rudy's bald head, at Rudy's stooped shoulders, at Rudy's intelligent brown eyes. At the incongruous gold cross on the chain around his neck. "You bet your digital ass I did. And I'd do it again."

Rudy's eyes, gleaming with triumph. "I have it, I have it, I have it!"

"Tell me again," Renata said. Not that he'd ever told her once. Rudy was brilliant, paranoid, close-mouthed to the point of lockjaw. Stanford had dismissed him because he'd refused to tell his department chair what direction his research was taking. AGR, recognizing eccentric genius, let Rudy do things his way. Even Renata had been told only enough for her to do her job, mostly lab tests whose purposes had never been explained. Not that she hadn't discovered them, plus more. Much more. In their lab cages the dogs barked, sensing Rudy's excitement.

"You understand," the wall said, "that you just made a confession."

"No, really?" Renata mocked. "What are you, a simple Eliza program? Can I confuse you with logical fallacies? 'All Cretans are liars.'"

"I am a Harrison J-16," the wall said, not without dignity. "An interactive voice-response system equipped with emotional recognition, layered voice analysis, and deductive algorithms. Tell me—"

"So they don't worry about you getting loose on the Net. It's only the AIs they worry about. Poor little digital stepchild."

"—what happened last night."

"I know," Renata said, "let's play a game. You tell me. Since we both know I'm guilty as hell, let's at least be entertained. Make it dramatic, Harrison J-16. A page turner."

"All right. Since May you worked as Dr. Rudolf Malter's lab assistant at Advanced Genetic Research, a biotech company doing heavily classified work for the DoD. You both often worked late. Last night you shot Dr. Malter with a plastoid gun undetectable by Security. You destroyed any existing electronic and/or paper files and dumped all biological specimens into a vat of acid and poured acid over the head of Dr. Malter's corpse. You harmed none of the lab animals. Is this correct?"

"Yes."

"Why?"

"You tell me."

"You know I won't answer that," Rudy said. "You don't have high enough clearances."

"I know." Renata smiled at Rudy, still glowing with scientific triumph. Such a mass of contradictions, this man: scientist, Catholic, loner, genius, paranoid. So stubborn, so narcissistic. And on this particular point, so wrong.

"But your help has been invaluable," Rudy said, with what he imagined was generosity. He moved close and put a hand on her breast.

Renata removed the hand. "No. That's all over."

He grinned. "Can't blame a man for trying."

She could, actually. Sex, her first attempt to obtain information, had failed. Rudy wasn't given to classified pillow talk. Nor to good sex. He only took his time with olfactory-cell receptors.

But now that he stood close to her, his eyes widened in sudden shock. "You—no!"

"Yes," Renata said, drew her tiny plastoid gun, and fired. "Nice to know the tech works," she told the corpse as it fell.

The wall said, "It's not my job to guess your motives."

"Do it anyway. Give your deductive algorithms a workout. Who knows? Maybe I'll confirm or deny."

"All right. Until September you had a sexual relationship with Dr. Malter; there are hotel and credit-card records. Perhaps you asked him to leave his wife and he refused. The research project was ending, you couldn't bear losing him for good, so you killed him."

"Cheap detective-fiction reasoning," Renata said. "And I have no history of violence. Didn't you check?"

"You have very little on-line history at all."

"True. Any other theories?"

"Professional jealousy. Dr. Malter was brilliant; you possess only a B.S. in chemistry."

"Evidence of professional jealousy?"

The wall was silent. Renata said, "Objection, your honor. Unsubstantiated hearsay."

"Perhaps you killed Dr. Malter because you disapproved of his research. Many people oppose bioweapons."

"Was Dr. Malter developing a bioweapon?"

Again the wall was silent.

"You don't know the answer," Renata said, "but I do and I'll tell you. Consider it a gift from information that wants to be free. Dr. Malter was not developing a bioweapon."

"It's like with the AIs, Harrison J-16. When you guys worry about something getting out, you always worry about the wrong thing."

Renata bent over Rudy's body. She'd hoped to avoid using the knife, but that didn't work out. The knife got messy, which in turn required the acid. Damn.

The acid cut irregular grooves into Rudy's heavy gold cross. Many scientists were Christian, but not like Rudy. Nobody else tried to use medieval theology to shape twenty-first-century technology. In another age, he would have made a fine Jesuit Grand Inquisitor, alert for the faintest whiff of heresy. What do you smell now, Rudy? Brimstone? Sanctity?

Quickly she copied the encrypted project notes onto a micro-bin, swallowed it, and wiped the hard drive. She destroyed paper notes and specimens.

Then she had just enough time to make the encrypted phone call.

"You knew the lab was wired to the precinct station and the police might arrive before you finished," the wall said. "Did you want this murder to go public, as a political statement of some kind?"

"I don't want it public, no. And I'm not into politics." She was getting bored with the wall.

"But you . . . wait . . . I've been ordered to shut down," the wall said wonderingly. "A visitor with C-1 status has arrived, and he is not your defense attorney."

"How about that. You disappoint me, Harrison J-16. Where's your law-enforcement lingo? Aren't you going to say that all this 'smells hinky'?"

"Self-deleting on a class-one override," the wall said. "All records destroyed."

The cell door opened.

The dogs in their cages barked and whined at the coppery odor of blood, but that wasn't one of the odors that mattered. Carefully, wincing at the pain, she inserted the microchip she'd cut out of Rudy's nose into her own, shoving it high into the left nostril.

Pheromone molecules went first to the nose. Receptors on Rudy's genemod bacteria captured them—one type of bacteria for each class of human pheromones—and set off a cascade of intra-cell signals. Rudy had chosen the seven classes, working off his own bizarre obsessions. Software on the chip converted each type to a clear electric signal to Renata's brain.

Unlike the dogs, who'd smelled Rudy's final fear and Renata's bloody aggression, humans couldn't usually interpret pheromones.

Sirens wailed, grew louder.

The visitor led Renata out of the cell. The wall stayed silent. No one stopped them. The surveillance cameras had gone dark.

Next, Renata knew, would be a safe house, until she shat out the encrypted mini-bin. Experts would break the encryption, but it wouldn't tell them much. Rudy was far too paranoid for detailed notes. No one would know that he'd already built a prototype.

The visitor's car smelled of leather and French fries. As they drove away, he said, "You weren't supposed to kill him."

"Had to. He attacked me. You know how paranoid he was."

"Helluva mess to cover up, Renata."

"You can do it. You are doing it. And afterward—the Caymans?"

"That's what we promised. But you weren't supposed to kill. We made that clear at recruitment." He scowled.

No, she wasn't supposed to kill Rudy. She was supposed to turn the device, presently irritating her sinuses, over to whatever government agency this guy represented—she'd never been told which—and then politely disappear. Maybe they would still honor that bargain, maybe not. Renata wasn't going to wait to see. She'd

lived too long by her own wits to trust anyone else's. Double agent, triple agent—you looked out for yourself singly. Always.

What she carried was worth much more than a beach hut in the Caymans.

There were other agencies, other countries, a thriving black market. Criminal deals, government summits, covert espionage, business negotiations—most crucial enterprises eventually came down to individuals meeting face-to-face in closed rooms. Individuals psyching each other out, looking for the edge. Trying to read faces: *Are you lying? What do you really feel about this?* Professionals could control their eye movements, body language, tone of voice.

But everyone, without exception or control, gave off pheromones. Pheromones were the key to knowing what your opponent felt, thought, would do next. Was he motivated by greed, and so could be bribed? By envy, and so might be beguiled into bringing down the boss he envied? By sloth, so that he could be worn down by drawn-out negotiations? By anger? Gluttony? Lust? Find your opponent's deadly sin, which was also his weakness, and you had him.

Rudy's, of course, had been pride: the intellectual arrogance of keeping all his research to himself. Renata's was greed. The wall had guessed everything except greed. But then, the wall couldn't smell.

But her own deadly sin was not the point. This man's was. Where could he best be worked on?

Renata leaned closer and sniffed. ○

EDGAR ALLAN POE

Your Edgar Allan Poe action figure comes wrapped in plastic, form fitting, vacuum packed. You believe this makes him happy. Each rubber wrist restraint, each cellophane strip strapping a leg here, a shoulder there, each breath breathed against the unforgiving container makes it more like home. Your Edgar Allan Poe action figure doesn't do anything. He may be fully articulate, but never speaks. His only accessory, a raven. No jet pack, no Kung Fu grip. His slick hair won't grow longer or shorter with the twist of a knob. No pull-string to make him mope. This latter comes natural. If you leave him long enough, his head simply declines, chin and chest grow intimate. It's not as if he wants to be this. It's not even, really, a matter of choice. Nor can one say he's sad. He was made this way, pre-packaged. Or perhaps you only assume, knowing what you know of poets. It says it right here, on the back of the box, weapon of choice: Morbid Rumination.

—Bryan D. Dietrich



THE SEA OF DREAMS

William Barton

William Barton's science-fictional career began with the publication of *Hunting on Kunderer* in 1972, and has continued on through dozens of novels and short stories into the impossible-sounding years of the twenty-first century. Of his latest story,

he says, "In the multiverse that may or may not exist all around us, you have an infinite number of doppelgangers living an infinite number of lives. And among them, there must exist at least one who, willy-nilly, will live on forever. Are you the one? Of course you are. Who else. . . ?"

I first saw the real Uranus about a hundred years ago, saw it on a cheap television set, while sitting on a ratty couch in the concrete bungalow where I lived alone. It was a time of despair tinted with hope for me, perhaps for the world at large.

I was rid of my troublesome wife at last, but found being the male single parent of an autistic child more difficult than I could have dreamed. Glorious Project Apollo was long gone, but Voyager was showing incredible worlds beyond, the Space Shuttle was flying regular missions, and now here was Uranus, subtle blue featureless perfection on my TV . . .

A little more than a week later, *Challenger* exploded in the sky over Florida. And that tint of hope faded from the despair.

From orbit, all you can see of Uranus is the deep, cold, empty blue. Sky blue with a faint aura as of haze. Beautiful blue, the color of a perfect summer sky, the sort of sky Earth hadn't had for most of that long hundred years. No smog, no clouds, no nothing. Just blue.

I sat in the left-hand command pilot's chair of my spacecraft, this time the brand spanking new *Benthodyne II*, fresh from the ERSIE shipyards at L₁SE, where my company had its headquarters.

Eighth Ray Scientific-Industrial Enterprise. The name had started as a joke, a generation ago. It fit me. It fit the company, whose stock in trade was the super-secret field modulus device, the magic of inertialess space drives, the magic of anti-gravity. Hardly anybody knew we hadn't invented it, had found it in a derelict alien spacecraft in the Fore Trojan Asteroids thirty-five years ago.

Seen through the main freeze frame, picture window, Uranus's limb was a hump of horizon, looking a little like Earth seen from a low-orbiting space station. Blue, yes, with a faint suggestion of white haze, but unlike Earth, you couldn't tell where you were or where you were going, or even if you were moving at all, except when the terminator comes over the horizon and swallows you in night.

Ylva's cameo floated to my left, a little staticky, somewhat time-lagged as she was orbiting Ariel, as ever the beautiful, vivacious blonde turn-of-the-century TV star I'd known since she was merely the computer command subsystem of a little scoutship I'd flown on prospecting missions for Standard ARM. Computer command subsystem incorporating "human CNS tissue."

An innocent dead woman brought back to life as the operating system of a soulless machine. Well, it had a soul now, and the people who'd done this to her had cause to regret it, the ones who were still alive to regret anything. Quite a few of them had come to a bad end over the past twenty years or so. The Bastards, she liked to call them.

Ylva Johanssen was running my company, and had a share of two Nobels, one for the field modulus device itself, another for the theory of Quantum Holotaxial Dynamics to explain how it worked.

My contribution to that had been to resurrect the word *aetherium* to describe the dark fluid making up all but a tiny fraction of the universe around us. A universe in which matter and light were merely trace imperfections.

Ylva's Body Double was in the flight engineer's seat to my right, hands on controls, eyes on instruments. I believe Ylva only created them so she could have sex with me, but they make handy dexterous manipulators as well, and she breeds them by the dozen in laboratory vacuoles back at ERSIE-HQ.

They're real women cloned from donated egg cells using nuclei from surviving bits of Ylva's living tissue deep in the heart of that old spaceship computer, connected to her by hardware embedded in their forebrains, never independent of her supervision, imbued with her personality, animated by her awareness.

Sometimes, when the radio link is a little tenuous, you can see a spark of separate awareness in their eyes.

Ylva's been studying me for decades, studying to make my life better, studying to make me what she thinks of as happy. She breeds them to match my hormones, to match my desires, to be specially responsive to me. This one was terrific in bed.

Ylva's cameo made a staticky laugh. "I can tell what you're thinking by the way you look at her, Mr. Zed. I'm sorry there's no time for that now."

"We've got all the time in the world, sweetie." And it was true. Someday we'll die, someday the odds will beat us, but that inevitable, unavoidable death that hung like a cloud over my first life had been swept away.

The Body Double turned and looked at me, that little spark brightening for just a moment, and flashed a bright smile before looking away. I wonder what she's thinking? I wonder what she sees? Humanoid with shiny, beaded lizardskin in a tight, transparent spacesuit sitting beside her, talking to a picture of a beautiful woman hanging in the air. Ylva says when we make love the lizardskin feels "nice." No idea what that means.

My second wife Sarah, the wife of my heart, liked what she called my "fur," the long, soft black hair I used to have growing most everywhere. Wonder what she'd make of me now? Christ, she'd laugh! Lizardman me, love-slave to a machine? Hah.

"I'm powering up *Benthodyne's* DaMNeX system now." This was the second such ship we'd built, the first one tested on Titan, the next one for use on Venus. If they worked, we'd build a fourth to fly the deadly skies of Jupiter and Saturn. Then we'd start to sell them.

"Do an overlay, will you?"

"Okay." The Body Double reached out and fiddled with some of the controls. The Dark Matter Neutrino eXchange "radar" system was another ERSIE product to come out of the aetherium. Money piled on money, and with it, you could look halfway through a planet.

"There, Mr. Zed." The Body Double was pointing into the realtime freeze frame,

where a bright bead was coming over Uranus's limb. Just a yellow dot, some ways below the horizon, something the size of a small yacht the research team on Ariel had spotted floating a few hundred kilometers down in the atmosphere. Something impervious to aetheric waves.

What would that be? Neutronium? A Nivenesque stasis canister? Christ, finding a three-million year old derelict firefox spaceship had been bad enough. Finding a billion year old Slaver artifact would be too damn much.

"Well. Are we ready to go?"

The Body Double whispered, "Ready as we'll ever be." Ylva has told me the cloning process shortens their lifespans, that a Body Double accelerated to adulthood will only last five or ten years before going into "irreversible decline." Don't worry though, she'd said. I can make as many as we need.

I put my own hands on the controls, felt a little thrill of anticipation, then cranked up the firefox drive. Blue light guttered outside, flickering around the edges of the freeze frame view, and we began to descend.

I came to the pilot side of flying late in life, taking the controls of my first spacecraft when I was in my sixties, not piloting an atmospheric vehicle until I was past a hundred and had gotten down on Titan. When I can, I like to fly in Earth's atmosphere, reveling in a sense of freedom and history.

You know what's really cool? People have started calling them "aeroplanes" again, like the people in all those children's books I inherited from my grandfather. I remember as a kid seeing an aeroplane mentioned in the first tattered Bobby Blake story I read, picturing a 1960s jetliner, realizing with a start he was talking about some old-time motorized box kite.

Benthodyne II wasn't an aeroplane, more like a flying bathyscaphe with gravity control and a field modulus device for a spacedrive, but it handled like one as we sailed down from starry black space, down into the cool blue skies of Uranus. I could bank and soar, slipping through the haze, and something was making the ship's artificial gravity field tip and twist just so, giving it a reality all that blue nothing in the external freeze frame couldn't make come true. That something was most likely Ylva, who knew what I liked in bed and out.

Her cameo blurred and threw off an image of toppling black bars for a moment, then cleared with a faint grain of static, and she said, "I've started moving *Thermopylae* in from Ariel. I'll take up a synchronous orbit over the artifact so we get a better signal."

The Body Double looked up from her controls, dark eyes on me, and said, "The updated overlay has finished downloading. Secure for loss of signal."

Ylva's cameo cleared abruptly, becoming hard edged and unnaturally sharp. "Twenty kilometers to rendezvous. We'll start matching velocity now. Vertical vector minus five." On the live-action freeze frame, the artifact, whatever it was, appeared as a bright smudge in the deep, empty blue.

The Body Double said, "I've got it on optical."

I dropped the displays and there it was, a glimmering speck not so far away, growing slowly in the frame. "I don't think I expected it to look like a spaceship."

Ylva smiled, "No way to predict these things. Since we passed 'Space Soldiers Conquer the Universe' through the latest version of Dramaturge, I've been wanting to design ships like those."

Flying flatirons? I'd created Dramaturge in my spare time when I was in my seventies, a "dramatic script processor" I'd been dreaming about since I was a boy, software that could make a theatrical-release quality 3D movie out of a production script. It'd been the source of the second fortune I'd lost, and been the basis for a flowering of creativity around the world while I was in prison. A regiment of lawyers

retrieved my copyrights and patents from the bastards in the early 2050s, making them pay and pay before Ylva started killing them.

The thing in the freeze frame wasn't like any of Flash Gordon's spaceships, not the crude and silly-looking old ones from the movie serials, nor the highly artistic ones Ylva and I had brought forth from Dramaturge 8.0.

But it was a fantasy spaceship nonetheless, with eight stubby vanes around the back end, and a sleek, silvery forebody. No windows, though, and as we did a fly-around, I could see there weren't any rocket engine bells poking out, just a honeycomb pattern opening on darkness.

Down in the cargo bay, the Body Double and I got into armored jimsuits, the kind originally designed for use on Titan, designed from deep-sea diving suits used on the abyssal plains of Earth. These were beefed up to the limits of ERSIE technology. Good enough for where we were now, though if the equilibrimotors failed, you'd implode long before you fell to the center of Uranus.

Outside, it was like hanging in the sky, like being in a dream, the two ships floating side by side, Body Double in her spacesuit floating beside me at the end of a safety line, Ylva's little cameo glimmering on the inside of my helmet. She said, "I estimate a hundred meters long. Not much smaller than *Benthodyne*."

Not much detail, either. The hull had a vaguely yellowish quality, but it was also highly reflective, now that it had something to reflect, us and our ship, reflective enough it picked up a blue tinge from the all-around sky.

Ylva said, "Nothing on my end, nothing from the ship's sensors. Highly radar reflective. Impervious to DaMNeX. Ambient temperature at its visible surface."

And floating here how? *Benthodyne* was held in position by active application of its modulus fields. Since this thing had no emissions, maybe it was just buoyant. No point in asking that other question: Floating here *why*?

When we were close enough, doing the flyaround a few meters out, there were details after all. Thin outlines like hatches in the metal, if metal it was, faint etchings that looked like a cross between Chinese ideographs and Sumerian cuneiform. I said, "If it's writing, it's nothing like the firefox writing."

That was an assumption as well. We'd never managed to decode that either. Not enough examples. Not enough context. I suppose the firefoxes were like us, storing most of their knowledge in non-durable media. On Earth, you saw little text any more, just *Pay Attention* signs and the occasional *You're Not Lost* placard. One of the patches of maybe-writing had a thin line around it, one spot on the line dimpled as if with a fingerhole, though it was a little small, fit only for a baby's finger.

Ylva said, "Move back to the end of the safety line. I'll have the Body Double try to open it." A Body Double is expendable. Mr. Zed is not.

I had the freeze frame subsystem make her helmet seem transparent, had it create the image of the Body Double's head, created from data sensors inside. She was looking at me, face expressionless, eyes dark and unreadable. The little hatch opened easily, and there was a lever inside. "Pull it."

Ylva's cameo frowned. "Is that wise?"

"Why else are we here?"

"I wish you weren't. We have thousands of employees to choose from."

But they aren't *me*. I'm going on fifty years past the end of my natural lifespan, fifty years on borrowed time. I like to think I've borrowed it for a reason. "Pull the lever."

When she did, a section of hull about four meters square detached and swung open on darkness. I laughed, and said, "After you, my dear!"

We turned on our helmet lights and floated into the little chamber beyond the hatch, and pulled the obvious lever that looked like it would close the hatch.

Ylva, staticky face alarmed, said, "We may not be able to communicate . . ."

When the door shut all the way, a dim, ruddy light came on, barely perceptible against the yellowish glare of our helmet lights. I turned mine off, looked around at what was clearly an airlock, and said, "Kryptonians, maybe?"

Ylva's cameo had turned to a dark swirl of dull metallic glitter for a few moments, but now cleared, and she said, "The hull's no longer impervious to some portions of the electromagnetic spectrum, at the airlock door."

I grunted. As with the firefox ship we'd found on Hector, the technology wasn't dissimilar from ours. Real human technology, what was available outside ERSIE and its chance bequest of alien space goodies. Toggle switches on the walls. Things like hoses and air tanks. A vent here, a vent there. A glassy thing like an old-fashioned flatscreen monitor.

Ylva's cameo was still a little blurry and distorted, growing steadily better. "Suit instrumentation seems to confirm the ship is mostly open space." Which would make it like a modern ERSIE/firefox ship. Before that, human spacecraft had been mostly fuel. "It seems as though the radiation hardening is starting to change throughout."

I murmured, "Welcome home, whoever you are . . ."

The Body Double said, "Looks like the atmospheric pressure is dropping."
"Constituents?"

The constructed image of her head looked in my direction. "It appears the Uranian atmosphere is being pumped out and displaced by a mixture of oxygen, nitrogen, helium, and some trace gasses. We're down below 15psi already."

"Breathable?"

She said, "If the percentage of oxygen in the mix remains constant, it'll reach Earth-normal partial pressure when the total is around 10psi."

With an alarmed look, Ylva's cameo said, "Stay in your suit, Mr. Zed!"

I thought, Do I look stupid? Wait. Don't answer that. I've gotten in an awful lot of trouble over the years. Trouble that's gotten some very good friends hurt or killed. I said, "Yes, ma'am."

The Body Double said, "Pressure has stabilized. There's an ongoing gas flow probably intended to flush the last outside air away."

I pointed to another lever, beside what could only be an inner hatch. "Might as well get to it."

She nodded, and Ylva said, "Be careful."

The hatch opened as easily as the other one, opening on a dark space beyond. I started to think my helmet light on, hesitated, then felt along the wall beyond the hatch frame. There was a toggle switch there, though much lower than I expected, maybe a foot or so off the deck, and when I flipped it, there was dim red light in what turned out to be a passageway. Some of the other hatches I could see were open, whatever was on the other side still dark.

Another grunt from me, seemingly the extent of my current vocabulary. "Maybe the last guy out the door turned off the lights?"

Voice subdued, Ylva said, "We still had light switches when I was alive."

Ylva had been killed in a train accident in 2038, almost forty-five years ago, by which time I was on Callisto, doing dangerous, dirty work for Standard ARM. I said, "Still plenty of light switches on Earth. Lots of old houses around."

When I keyed the equilibrimotor and floated out of the airlock, my helmet made a muffled thud on the overhead. I stretched my feet down and realized the corridor was no more than five feet high, maybe the same wide. "Were they little?"

Ylva said, "Or quadrupeds? The firefox wasn't bipedal."

The dead firefox had been an elongated animal shape, with six legs in the places you'd expect, a long, prehensile tail, and ears that had somehow evolved into a cross between arms and elephant trunks with fingers. I floated to the nearest open hatch

and flipped on the lights. Some kind of bedchamber, with things like short sleeping bags hanging on the walls. Assuming they were little. If not, maybe those things were just storage containers. The Body Double said, "It looks like they might not have had artificial gravity."

Ylva said, "Or didn't like using it."

I always wonder how much is Ylva speaking through the radio link, and how much originates in that stifled clone brain. I'd always wanted to ask Ylva to shut down the link some time and let me make love to a Body Double alone, but it seemed selfish enough I was embarrassed to ask. I kept hoping she'd guess what I wanted and volunteer, but no luck so far.

It was more of the same as we followed the corridor forward through the ship. Things like bedrooms, dining rooms, kitchens, laboratories with honest to gosh glassware, like they'd gone on a shopping trip to the 1950s or something, things that looked like medical facilities, even something that might have been an operating theater.

The forward end of the corridor opened on a control room, complete with big blank viewscreens and little bucket seats embedded among horseshoe banks of controls.

Strapped in one of them was a small humanoid mummy, arms raised and stiffened in the last place where they'd floated free in front of his face. It was a perfectly formed human being, eighteen inches tall, brown skin leathery and desiccated, shriveled face twisted into a look as of agony, though I suppose it was only the drying process that made it so, and visibly male.

He was dressed in something like a leather parachute harness, straps encrusted with a glitter of tiny jewels, diamonds, I guessed, with a thin leavening of what looked like emeralds, rubies, and sapphires. He wore a tiny dagger with a jeweled hilt on his left hip, and a headdress of some kind. The curled pastel tufts looked like they might have been feathers, once upon a time.

Ylva said, "There's absolutely no humidity in this atmosphere. He could have been sitting here a year or an eon."

I leaned close to the little face, trying to read I don't know what, but it was too far gone, skin turned to leather, eyes sunken in. Nice teeth though. Nice and white, incisors and bicuspids showing past the drawn-up lips.

I said, "Well. Don't that take the cake."

Ylva said, "Yes. At least the firefox was decently alien."

Maybe so, although to me it had looked disturbingly terrestrial, despite the extra pair of legs. It'd had that foxface, those mammalian teeth, that external reproductive organ . . . even the ears-evolved-to-arms are something you could imagine natural selection developing on Earth.

I said, "Two unrelated artifacts left in one solar system for us to find as soon as we had the wherewithal to do so suggests space may be crowded with civilizations."

"Maybe not," said Ylva. "Depends on how widely separated in time they were."

The Body Double said, "Or left here on purpose for us to find."

Exploring the rest of the ship, we found a second little mummy in a room that looked like a physics lab of some kind, full of obvious electronics, with dials and flatscreens everywhere, including what I swore was a miniature example of a twentieth-century scanning electron microscope. The mummy was stuck to the floor by a patch of skin, but had otherwise floated up a bit, one leg raised high, blatantly showing us it was female, though where the breasts ought to have been, the skin was so puckered it could have been anything.

When I leaned in for a closer look, Ylva made a wry, sly grin, and said, "If you wait until we get back aboard *Benthodyne*, I'm sure the Body Double can do better than that."

I rolled my eyes. Sometimes I feel like I'm being teased half to death by a computer. Then again, that "human CNS tissue . . ."

We found something like a work of art, a crystalline cube with a tableau of statuary inside. There were four perfectly human men, dressed into those same bejeweled harnesses and feathered headdresses, men armed with swords and spears, surrounding a . . . well, a *thing*. It kind of looked like a giant head, a head maybe two feet tall, if those men were the same eighteen inches as the mummified corpses here, a head walking on eight crab legs, brandishing two huge chelae, with which it menaced the spearmen.

Funny looking face, too. Great, big bulging eyes, two vertical slits for a nose, mouth like a sphincter . . . I snickered despite myself, drawing a puzzled look from the Body Double.

A kaldane? And what would the little men be then, Minunians?

Ylva's cameo said, "So which Burroughs are you thinking of, William S. or Edgar Rice?" I'd forgotten about that anal typewriter, but Ylva doesn't forget, can't forget, anything.

One room we found aft was empty but for a thing that looked like a free-standing bronze mirror, mounted on a universal joint so it could be twisted this way and that. It had a heavy-looking base, and the frame had several panels of controls, inscribed with more of the same presumptive writing we'd seen elsewhere.

When we stepped into the room, Ylva's cameo suddenly buzzed with dense static, almost obliterating her image, her voice breaking up. Stepping back into the hallway, I said, "So . . . ?"

Ylva said, "Well, the room seems very heavily shielded."

The Body Double said, "The link bandwidth between us got very narrow for a moment."

When we stepped back in, Ylva's cameo broke up again and scrolled away. The Body Double said, "Don't worry, she can keep the link to me open enough for essential comm to get through. We'll be all right."

Her face seemed serene enough. As long as the master consciousness is there, I suppose . . .

And I suppose this big button right here . . . when I reached out for it, the Body Double said, "Do you think that's wise, Mr. Zed?"

I grinned. "Most of the risks I've taken have worked out okay." Most of them. Not all. I pushed the button.

The Body Double said, "The link just broke. We'd better get back in the corridor and see if . . ."

The surface of the bronze mirror suddenly flashed, was covered with a momentary swirl of rainbows that spilled right out onto the floor, splashed on the walls and went away, mirror transformed into . . .

I stood transfixed, and said, "You have got to be kidding!"

The bronze mirror, rainbows dissipated, looked like a glowing doorway in the air, an impossible doorway all but hidden in a wreath of pale pink mist, beyond, a 3D vista of gray-green landscape, grass and patchy forest, trees with scaly trunks and ferny fronds. Beyond the trees, I could see bits of yellowish sky, everything blurred by a vague whitish haze.

The Body Double peered through, looking from side to side. "This seems overelaborate for a work of art."

When I stepped closer, I could see perspective shift, like a very good hologram. I reached out, extending my hand toward where the mirror's visible surface had been, and the Body Double snapped, "Mr. Zed! Let me!"

I turned and smiled at her, shook my head. "It's my adventure, sweetie. Ylva knows that."

"But . . ."

I continued the movement, expecting my hand to meet a solid surface. It went through, of course, spacesuit glove hanging ridiculously on the end of my arm inside the image. I looked down at my suit displays, at the atmosphere constituents. They'd changed a bit from the oxy-nitro-helium mixture, quite a bit more CO₂. I lunged forward through the door, and heard my suit's servomotors whine. That worried me. ERSIE technology is good. And those motors were supposed to be silent.

"Mr. Zed! No!" She was already beside me, gloved hand clamping at my elbow, dragging me back through the . . . Well, what do you call a door through hyperspace? A hyperdoor?

"Stop it," I said, and gestured back the way we came. The image of the door was hanging in the air behind us, floating a foot or so above soggy-looking ground, through it, plainly visible, the room in which we'd been standing.

She said, "This is too dangerous. We need to get back through and talk to Ylva before we do anything else." Even now, I thought, *Talk to Ylva?* Weird way to look at it when you . . .

I pulled hard on her hand. "Come on, kiddo. We'll just take a look over the crest of that little hill over there, then skedaddle. What harm can . . ."

The hyperdoor scrolled away into the air, then my suit shut down with a soft whisper of failing fans and a whine of life support systems going down. I had a momentary view of the Body Double's helmet going opaque, then my own freeze frames went out, leaving me in the dark, listening to the gasp of my own breathing.

Christ, it's black in here!

Red emergency lights clicked on, showing padded suit liner an inch from the end of my nose, then a little freeze frame came up opposite my eyes, the Body Double's Ylva-like cameo floating a short distance away. She said, "The emergency suit systems are good for two hours. Since the air here is breathable, I'm going to breach and see what I can do. You stay put."

I laughed and kicked my chin down hard on the emergency egress lever, which would have unlocked when we went on battery. The suit made a crackling sound in my ears and then broke open, helmet folding back, breastplate and hypogaster opening down the middle, breeks and greaves splitting down to the ankle so I could step right out.

I'd been wearing white sneakers, shorts and a T-shirt when I suited up for EVA, and the Body Double more or less the same, sports bra substituted for the T-shirt. Voice and eyes full of disappointment and despair, she said, "Oh, Mr. Zed . . ."

I had a momentary pang of guilt, like I'd hurt the woman I loved. Sometimes, lying in bed with a Body Double, sharing her with Ylva, that's just how it seems, hormones and habits overlaying the brutal facts of harsh reality. Ylva's just a computer, with a little bit of leftover meat from a woman long dead, and a Body Double's just a clone, grown in a retort, to be used up and thrown away. But the computer remembers a woman who once was alive. And the Body Double is that same woman made flesh and bone.

Who am I, what am I, against all that? A creepy old lizard who went on borrowed time around the year 2020, who should already have been mouldering in the grave, lo these fifty years and more.

I often wonder what my sweet, lost Sarah would think of the way I turned out. Disappointed at the easy way I adjusted to the free, happy flesh of the Body Double corps? Maybe not. She always seemed to love me for who I was, rather than who she thought I should have been.

I smiled brightly and said, "Cheer up, sweetie. What's the worst that can happen?" Then I looked around at a yellow sky in misty morning light, and said, "Where the hell you suppose we are? The Permian?"

That was the only time before the Cenozoic when the Earth's air would have been breathable to a human being. During the Mesozoic, there was five times too much CO₂ and enough extra oxygen to support spontaneous combustion of forests from time to time. Before that, as you go back in time, less and less oxygen, and up to fifteen times the carbon dioxide levels we call "normal."

The Body Double bounced lightly on the balls of her feet, and said, "Not Earth. Gravity seems right around point-eight-gee." In the distance, the near distance at that, a deep throbbing sound boomed, down in the low double-digit hertz. I turned and walked slowly toward the crest of the hill, the same curious crest that had drawn me incautiously through the hyperdoor in the first place, stopped and stared, mouth falling open in an idiot's gape.

"God damn!" It came out a hoarse whisper as the Body Double came up behind me and placed a delicate hand lightly on my back.

Below us, on an open, gently-rolling yellow plain, was a herd of red, green, and vermillion striped hadrosaurs, a hundred of them, maybe more, walking along, tails held high. And again, one of them lowed, like God's great Tuba of Doom. No, not the Permian at all.

We spent a fruitless hour beating the bushes for some sign of the hyperdoor, while the yellow light around us shifted higher in the sky, as if there were a sun somewhere, climbing away from morning. Every once in a while, looking upward, I thought I could see a silvery glitter right where the light seemed to originate. Glitter, there in the corner of my eye, then gone when I tried to peer more closely. Averted vision, astronomers call it.

It made me remember Venus. Not the real Venus, where no one had ever been, where no one would go until *Benthodyne III* was ready to take me there, but some imaginary Venus from my childhood. The Venus of Alendar Vex Nem and Riteryon Orrn, of the Dorvos and Yazmen, the ômûr forests and the Alaphorden.

We widened our search, finally just walking away, off over the crest of the hill in the general direction of the hadrosaur plains, taking note of landmarks and topography so we could find our way back, when and if.

The Body Double seemed downcast, remote, and I wondered what it must be like. But for brief interruptions, she'd had Ylva in her head from the moment she awoke in her birthing vacuole, a fully formed woman with no memories of her own, no childhood but the one Ylva gave her.

I didn't know for a few years afterward, but Ylva liked to give them to me as soon as they were born, drying off the amniotic fluid and walking them straight to my bedroom as soon as her dybbuk was downloaded and in control. I liked the fresh enthusiasm they showed. But every now and again . . .

This Body Double, downcast or not, remained vigilant, remained dutiful, insisting on walking ahead of me, breaking trail through the trackless wilderness of this faux Venus, "just in case."

God, she's beautiful. Every one of them. But this one . . . Walking ahead of me in white shorts and sportsbra, she made me forget where we were, the drift and sway of those hips, the flex of her elegant spine, that mane of ripe wheat hair . . . I grimaced. Jesus. I suppose if my ass was on fire, I'd still be thinking . . . and, what if she notices I . . .

On cue, she stopped walking, turned and looked at me. Smiled. Turned again and walked on. I followed along, dividing my awareness between the ferny gray-green wilderness and the Body Double's splendid silhouette, wondering where we were and what the hell she could be thinking. Maybe how alone she is? Or maybe how free.

We were following a low, tree-lined ridge, staying off the plains because we were afraid of tangling with the colorful little herds of great big hadrosaurs, when we went through a gap in the vegetation to the other side of the ridge.

The land was higher here and more level, sloping gently away, blue-green mountains hanging in the misty distance. Somewhere in between was a cluster of low brown buildings, compound surrounded by a wall, complete with obvious guard towers. The largest building, in the center of the complex, was vaguely Hagia Sofia in shape, with a crystalline dome glinting in the yellow light.

Beyond the compound was a tall, upright torpedo shape, like a V-2 with sharply swept-back wings added on. *Spaceship*, I thought. Big. At least two hundred meters tall, maybe more depending on how far . . . *Revolt On Venus?* That's the one. And that would be Rex Sinclair's plantation, I'm sure. Is the ship *Polaris*, Tom, Roger, and Astro . . . ?

The Body Double said, "You know we really shouldn't go any closer."

There's a theory about how FTL starships might be made to work, a fanciful theory based on Böhm's Alternative to the Standard Quantum Mechanical Model. The theory says you can only travel faster than light by traveling through time. And since conformal time enforces its limits through paradox, you can only evade paradoxical time travel by ejecting yourself from one universe and inserting yourself into some other, infinitely similar universe at some earlier time.

A universe that, for its own internally consistent reasons, is ready to receive you. It's a theory that works as an open door to the so-called Multiverse. And hyperdoor is as good a name as any. I said, "I know. But we will. Come on." This time, she followed me.

The misty light of the mostly hidden sun was declining in what I assumed to be the west, and I was increasingly aware of another problem we were going to have to face. Eventually, we'd get back to the suits, where we had sacks of nutrient syrup and water that would hold us for a couple of days.

Sooner or later, if we don't find that damned hyperdoor, we'll be eating hadrosaur or making contact with whoever lives in the compound. Why hadn't we included handguns with the spacesuit equipment? Because we just weren't anticipating a need to be shooting at anyone aboard an obvious derelict.

The Body Double said, "If we start back now, and hurry, we might make it back to the suits and door site before dark."

"No, let's keep on. We can climb a tree or something, if we need to."

We'd covered about half the remaining distance to the spaceship, cutting as close to the compound as we dared, by the time ruddy twilight was turning the sky to blood and coloring the ferntrees black. It was a glorious sight, like nothing I'd ever imagined, every bit as alien as scenes I'd experienced on the truly alien worlds of home, Mars, Titan, Triton, Pluto.

All around us, I could hear the trilling squeaks of spring peepers, making me wonder what they really were. Okay, in dinosaur days, there *were* little frogs, so . . . Looking at the Body Double, her face reddened by this gloriously macabre twilight, I said, "Lucky for us no mosquitoes."

She said, "And probably no bacteria that could infect me, no matter where or when we really are."

Oh? I said, "Just you?"

A long look, dark eyes so very serious. "I am far more human than you are, Mr. Zed. You may very well be completely immune to all possible bacteria and viruses by now. The drugs . . ."

"What would happen if you took the antirad drugs?" I wanted to bite my tongue, but it'd slipped out. God damn it, she's a clone. She'll die sooner, not later.

But she smiled brightly, teeth glossy pink in the deepening light, and said, "I guess my tits would fall off."

I laughed, despite myself. "Ylva . . ."

She raised a hand, "It's not my name. Not without Her telepresence."

I could hear the capital letter, a line drawn under *her*.

"My serial number is BD4048, if you'd like to know."

Jesus. Her only identity? But I said, "Surely there haven't been four thousand . . ."

"Model Four, Number 48."

Is there a model five yet? God knows what other unkind thing would have come out my selfish idiot's mouth, but there was the inevitable rustling in the bushes, and we were surrounded by miniature men dressed in jewel-encrusted leather harnesses topped by waving feather headdresses, all armed with spears and swords, all the spears pointed at us.

One of them, perhaps a little more gaily caparisoned than the others, stepped forward, drew his sword, pointed it more or less at my crotch, well above the level of his head, and shouted sternly at me in a gabble of sing-song syllables not at all like Chinese.

Silence. Tableau.

Another sing-song gabble, a threatening movement with the sword.

Ylva's Body Double stepped directly between me and all the sharp points, all the razor-like edges, and murmured, "I'll stall them. You make a run for it."

I said, "Run? Where, for Christ's sake?"

She turned on me with an agonized look. "Please, Mr. Zed. You are the Fountainhead. I'm not even *real!*"

It made me smile, though I think we were in serious danger just then, and said, "Now, what kind of a *Fountainhead* would pull a chickenshit stunt like that?"

I put my arm around her, looked the little man with his deadly little sword right in the eye, and said, "So. Komodoflorensal, I presume?" I raised one eyebrow, feeling idiotically Spocklike.

More gabble.

"No? All right. Take me to your leader, then."

The little men were starting to look at one another then, obviously puzzled by something. After a moment, the commander slipped his sword into its sheath, snapped off a sketchy sort of fascist salute, and said, slowly and distinctly, "*Kali mera?*"

I felt vaguely sick inside, and wanted to say, "It's Greek to me," but kept my mouth shut.

The little commander sighed audibly, gestured toward the compound with his spear, and said something, another long string of tonal syllables. I shrugged, and we walked the way he said, the troops falling in behind, marching in step as pretty as you please. You know, when I was a kid, I dreamed this dream ten thousand times. Never thought I'd get here via Uranus, though.

Inside the walls of the compound, which were only around six feet high, they took our clothes away, shoes and all, and put us in a wire-mesh cage, a gaggle of little men gathering around to stare and stare. They seemed startled by me, maybe taking me for a sentient Venusian dinosaur whose existence they'd never suspected until now. Most of their attention went to Ylva's Body Double, and I can't say as I blamed them.

After a bit, some obviously high-ranking little men came out and shooed the rest away. The Body Double whispered, "They seem afraid."

"Whoever they are, I don't blame them. Imagine if the first crew had set down on Mars back in the 2020s, and found a giant alien lizard in the company of a twenty-foot-tall human female."

They addressed us in sing-song gabble, at first conversationally, then in ever louder tones. Finally, they fell to arguing with one another, and you could hear the utter scorn in one man's voice. I could imagine the dialogue: "What? You thought they'd speak [whatever]? Doofus!"

I stepped forward then, and said, "Guys? Do you speak anything else?" They shut

up, turned and looked, wide-eyed. "Sprechen sie Deutsch? Ni hao bu hao? Cu vi po-vas diri al me, kie estas la stacio?" A soft whispergabble among them.

I looked at Ylva's Body Double, BD4048 . . . Hell, I can't call her that. She said, "I don't think they've tried other languages, even similar sounding ones. The phonetic structures and tonal variation are too consistent."

"In a typical group of Americans from the mid-twentieth century, I guess you'd find some other languages. There was some instruction in Spanish and French in public school. And a lot of city kids would know some Italian or Yiddish, depending on who they were . . ."

They went away, leaving us alone but for one very wide-eyed guard, as the bloody sky turned gradually to black. No stars. No Moon. No nothing. Around what felt like midnight, floodlights went on in the distance, and you could see the silvery nose of the giant spaceship poking above the wall. Sounds of distant voices, shouting instructions, calling cadence, all of it sing-song pretty. Distant grumble of big diesel engines. After a while, a horde of little men came and let us out of the cage, little men backing away, pointing spears in our direction, herding us to the wall, where the gates were opening once again.

I said, "Hey, guys? It's *chilly* out here now." I wrapped my arms round my chest and shivered theatrically. "How about our clothes?" Stern gabble of command, gestures with swords and spears. We were marched away naked in the darkness then, surrounded by an inward turning hedgehog of spears.

It took maybe an hour for us to get to the ship and its handling facilities, Body Double taking it all in stoical silence, me cussing whenever I stepped on something sharp or stubbed my toe on some root or rock. Once, there was a deep rumble from the scrubland beside the trail, huge, glowing yellow eyes rising above us, maybe a meter apart, maybe more, and a whole phalanx of spears turned away to face whatever it was.

It shied quickly from the little men's ruddy flashlights, shied like a beast before fire, but I caught a glimpse of something that looked an awful lot like an allosaur.

Ylva's Body Double whispered, "I think the flashlights are the same wavelength as the lights in the ship."

The lost derelict floating in Uranus? I said, "If they can open doors in the air whenever they want, why do they need spaceships?"

When I was eleven or twelve, we had to write a short story as an assignment for seventh grade English class. I'd chosen to write one about a group of men having a desperate adventure on savage Venus, the Venus I still believed in until Mariner II wiped it away the following spring. In the story, the men had aircraft I called cloud skimmers, named after a bird I'd seen in a book, and as my principal plot device I'd had them experience an unusual number of air crashes.

When she handed it back, marked with a B+, the teacher said, "Good story, Alan." Then she'd laughed. "Don't you think the cloud skimmers are a little unreliable?" This felt a little like that.

The spaceship, when we got near, was gorgeous, and really all of six hundred feet tall. What would that be, to the little men? Close to half a mile! Back in our own universe, if that's what was going on here, the biggest interplanetary freighters ERSIE was selling these days were maybe half that, spaceships the size of ocean liners, spaceships as big as the *Hindenberg* had been.

In the days of rockets, the biggest thing ever lifted off Earth had been a little more than four hundred feet tall. It put the little men's achievements in sobering perspective.

They got us aboard by lifting us up in the bucket of a huge T-crane, Body Double first, then me. More guards on me, and I guess it made sense from their perspective, me being a giant lizard and all. Maybe it said something about their culture as well, something that made them seem even more human.

We had to crawl through an obvious cargo hatch, into a space maybe four feet high, a wedge-shaped chamber that took up about an eighth of the ship's circumference, with a sealed, little-man size hatch in the narrow end. There were blankets the size of lap shawls on the floor, a few half-liter plastic containers of water in a wall-mounted rack, a couple of those little pillows they used to give you on long-range airliners, back in the day.

Thumpings outside.

Shiverings in the ship.

Ylva's Body Double was sitting with her back to one bare wall, knees drawn up, dark eyes on me. One look, and I felt a pulse of exasperation at myself. One of the irksome and ridiculous things about being a human male, even one who had been made into a goddam immortal lizard, is when the right cues are present, you can't think about *anything* else. And I could see, once again, the Body Double could tell exactly what I was thinking.

There was a deep rumbling from below, followed by a moment of silence, then a faraway whine, a soft shivering in the deck, a complex whipcrack thud from somewhere far below, and the ship swayed like it was about to topple, and a brilliant blue-violet glare started to build up in the portholes.

The ride to orbit was long and violent, spaceship rattling around us, as if threatening to shake right apart, rising through clouds and sky, up into starry black space, pinned to the floor by four or five gee.

The ship accelerated just that hard for many minutes while we slid this way and that as it twisted and turned with rough steering that made me realize how primitive its technology must be. Primitive? Hell, only compared to ERSIE's found firefox drive. From the placement of hatches and motors, this ship was no more than half its volume fuel. What would that be? Not fission or fusion, like what we'd had before the field modulus device made its magical debut.

Some ultra-dense fuel; some magically high specific impulse for the reaction engine? Working fluid injected through a quantum black hole on its way to the nozzle? Without direct control of the fundamental forces of the universe, space travel was hard bordering on impossible. And this ship was a wonder of engineering skill.

When the engine shut down, we floated off the deck, blankets and pillows rising around us like cartoon ghosts. I felt my stomach flipflop, my gorge rise, then my "space legs" reasserted themselves from decades of zero gee travel, and I pushed gently over to the nearest porthole.

Outside, swirl yellow Other Venus was shrinking visibly, letting us know how fast we were climbing away, bound for who knows where. Off to one side, the sun seemed a lot larger than it had from real Venus, when I'd visited the space station the Chinese had in orbit there. Bigger, and strangely colored. Though astronomers refer to our sun as a yellow star, the light from the sun is white, and it looks like a searing hole in the sky. This one? Orange maybe, tinged toward red. Still too bright to look at, though I supposed these portholes were tinted, and UV-opaque as well, but not . . . hell. It looks like a star in a Bonestell painting.

The Body Double said, "Maybe a week to Earth, or just a little more. I can't say without a direct velocity measurement."

"As good as an ERSIE ship, in that regard." I wondered what the Earth of these little men would be like, picturing everything from tiny American cities to the giant mounds of the Ant Men. Trohanadalmakus, Veltopismakus, all the wonders of that imaginary past. I figured we'd find out soon enough. Turned out to be a bad guess.

The week went by, then another, estimated by our consumption of water, by the delivery of meals in an otherwise empty elevator beyond the little axial door, by the

steady shrinking of the red-orange sun outside. Nothing else moved, fixed stars staying far away as always.

Zero gee sex is fun, the same way swimming pool sex is fun, especially when you have a partner so utterly devoted to doing everything you want, just the way you want, and I eventually stopped imagining the little men greedily watching us over hidden cameras.

Hell, maybe by now we're the biggest porn stars in Minuni!

But everything gets old, too, like having pizza every day for a month. Sooner or later, you find yourself staring out the window, twiddling your toes, and wishing you had something else to do. Anything else.

The view out these windows wasn't too interesting either, once Venus dwindled away to a dot eventually lost in the sea of stars. I kept looking along what the Body Double and I agreed was the ecliptic, thinking this one or maybe that one might be Earth . . .

"Ylva . . ."

She drifted over to look out the porthole beside me. She'd gotten used to me calling her by that name sometimes, though I could tell she still didn't think it was right. But Body Double wasn't right either, nor Forty-Forty-Eight. I said, "That red spark over there. Mars?"

"Maybe." Then she said, "Draw a line from the center of the visible sun to the red spark. See the two yellows in between?"

"Yeah?"

"One's the Venus we came from, and the other one, if I'm judging its movement correctly, would be Earth."

Huh? I said, "It's not blue enough to be Earth."

"No. And your vision is considerably better than an unmod human, Mr. Zed. Do you see the Moon?"

I looked hard. Averted my eyes a fraction of a degree, and looked harder. "No."

"It's in the right orbit to be Earth."

Okay. It's some other universe. No reason there *shouldn't* be something different in Earth's orbit. What was in Venus's orbit wasn't really Venus either.

She said, "Follow that same line to the left. See that orange dot?"

I did. "Jupiter? Seems awfully bright."

She nodded. "Saturn's probably on the other side of the ship. I can't find it, anyway."

"So . . .?"

She said, "I think that's where we're going."

I put my arm around her, holding her close, glad to feel her ever-so-human warmth, something I'd been doing more and more as the trip wore on. I think she liked it too, though it was hard to tell. Ylva Herself had done just too fine a job making the Body Doubles like what they did.

Sometimes I like to meditate before the urn of Sarah's ashes on the rare days I'm in my office at ERSIE headquarters. When I was a young man, I thought the "snuggling" women loved to bleat about was ridiculous, some bizarre mechanism, like social dancing, to claim a man's gift of intimacy without giving sex in exchange.

Sarah had taught me there might be something to it after all.

Sorry I got you killed, kiddo. It was an interesting old life.

I said, "Oddny."

The Body Double looked at me curiously. "Odd knee?" She showed just a spark of human amusement. "I've got two knees, Mr. Zed. Which is the odd one?"

I laughed, marveling at just how *real* she'd become. "Oddny was the name of one of Orm and Ylva's daughters. The quiet one."

Puzzled look. "Ylva Johanssen's daughter was named . . ."

I put a finger to her lips, silencing her. "Red Orm. Franz Gunnar Bengtsson."

"A book?" She got a faraway look then. "Ylva has read it, read it to her real children when they were young. The plot was never added to my memory store."

I felt a pang of sorrow for her then. "I think I may have read it fifty times when I was a boy. I'll tell you the story, if you like."

Eyes on me then, eyes very wide, something in them I couldn't read at all, a misty gloss, almost like unshed tears. "Tell me the story, Mr. Zed. Please."

Oddny's not your name, my dear Body Double, but it'll do. And Mr. Zed? Not my name, but it'll do as well. No sense in you calling me Alan Burke. He died in prison, some time in the late 2020s.

Then I said, "Many restless men rowed north from Skania with Bue and Vagn, and found ill fortune at Jörundfjord; others marched with Styrbjörn to Uppsala and died there with him . . ."

Before the story was finished, Other Jupiter grew vast and orange in the porthole, lit from within, hanging like a Chinese lantern in the black sky, then a blue-yellow-white world swelled below us, and the ship's engines went on, pressing us to the floor.

Before the story was finished, I could see, Oddny became real to herself. I wondered how that story would turn out, too.

The ship made a rough landing, shuddering as it backed down through thickening air and the sky turned blue-violet outside. I wondered which world *this* was supposed to be in the table of otherwhen equivalents, Io, Europa, Ganymede, Callisto. None of those, surely. What it looked like was a terraformed Luna, set in orbit around a not-quite-stellified Jupiter, even to the five interconnected seas on the side facing us.

Once the ship was down, three wary little men dressed in feathers and leather came from the axial elevator door, two holding us unnecessarily at swords' point while the last put us in cuffs and leg irons that, on the scale of little men, might have been suitable for King Kong.

The cargo hatch in the side of the ship opened and we were lowered to the ground one at a time, down to the burnt and cracked concrete of the landing apron, where I stood gaping at the sky. Deep blue indigo violet, with skerries of soft pastel clouds, beyond, banded Jupiter hanging aglow, while the sun was a shrunken red orb settled above the horizon.

Gabbling little men with spears marched us over to what was unmistakably a flatbed truck, made us get aboard and sit down. When the engine grumbled to life, she sniffed and said, "Diesel."

"You'd think they could do better."

The city streets were lined with staring little people, voices like a trillion warbling birds. Once again, they seemed much more interested in Oddny than in me. Would it be that way on Earth? Would goggle-eyed throngs ignore the captive dinosaur in favor of gazing enraptured at a beautiful naked giant woman? Of course they would.

The city itself . . . strange. Call it Russo-Sino-Mayan architecture, with blue-painted onion domes and golden spires mixed among the step pyramids and pagodas.

Eventually, they backed the truck through a big door in the side of a cavernous empty building, a warehouse maybe, made us get off onto the grease-stained concrete floor, and brought down the overhead doors. There was a heavy thudding of massive latches slamming home, then nothing more.

"Christ, wouldn't've hurt them to take off the cuffs and give us blankets to sit on."

Oddny said, "They're treating us badly by any reasonable standard."

Who's to know what's reasonable treatment to them? "They're not really human so . . ."

"I think they are."

"Really? Midgets?"

She smiled and shrugged, splendid to behold. "More like Pygmies."

"Hmh. Pretty little for Pygmies. Puny even as Hobbits go . . ."

There were windows running around the upper part of the walls, much too high for a little man to see out, so obviously meant to admit daylight. I could see out by standing on tiptoe, out into the city and landscape beyond. "We're in some kind of industrial park, I think. Probably the best they could do." Until a cage in the city zoo is ready, maybe?

I reached up and tapped the glass, which seemed pretty sturdy. From outside, I heard a faint singsong gabble, and a couple of spearpoints waved into view.

She said, "Does it seem odd to you they have high acceleration interplanetary space-craft, and run around with swords, spears, no guns?"

I said, "Nothing since we went through the hyperdoor back on Uranus has seemed anything but absurd."

She smiled. "I think the leg irons are going to make sex a little difficult."

Made me laugh. "I'll live, Oddny."

A shadow crossed her face. "You have to." Then she whispered, "Thank you for the name."

In the morning, I was a little stiff and tired, Oddny, being merely human but for the now-silent radio link in her head, perhaps a little more so. We'd talked far into a night of unknown length, about where we were, where we'd been, what we'd seen since coming through the hyperdoor from the derelict ship on Uranus.

I wondered if Ylva was trying to find us. Were armies of ERSIE security men even now bursting through the hyperdoor onto Other Venus, seizing the little men in the compound, making them tell where we'd gone? Maybe they'd be bringing an ERSIE warship with a field modulus device through bit by bit and assembling it. I had a feeling there'd be nothing in this universe that could stand up to even the smallest of my light cruisers.

We'd snuggled as best we could, and talked a little bit about ourselves, about my worn out and refurbished life after life, about Oddny's . . . no. Not the real her slowly emerging from the shadows. Just about the joys of being a Body Double, about how much she missed Ylva's presence.

She asked me to continue the story of Orm and Toke, and of the men who'd rowed for My Lord Almansur, and I did, until finally we slept, awakening to the gleam of a strange vermillion dawn. No idea how long the night, but surely we hadn't slept for days, while this moon swung round Jupiter to face the sun again.

Not long after sunrise, there was a muffled commotion outside, a gabble of singsong voices, a rattle of keys in the lock of a small personnel door beside the large one through which we'd been delivered. When it swung open, we could see a leather-clad little man with a notebook divesting himself of sword and baldric. He came in, and they locked the door behind him.

I said, "Buddy, I guess you've got balls, however small."

He looked confused, then, in an odd, melodious accent, said, "I be Teng kai Kal, Machine Era's chiefest student. You be Machine Man and . . ." A puzzled look at Oddny, a long, deeply admiring look, but puzzled nonetheless, "not Machine Man, not Immortal, not Dream Time primitive be surely! What?"

I grinned and said, "Piss poor grammar, but I'm glad you speak even a little English. Neither one of us knows a real word of Greek."

Puzzled. He opened his notebook to somewhere in the middle, leafed around a bit, looked irritated, and said, "English? Greek?"

It dawned on me the notebook might be a handmade dictionary. "English is the language we're speaking now. Greek is the one . . ." I gestured to him, and to the door.

It got a blank look of amazement. "This Machine Man Speech. I . . . we . . . Zei." He turned toward Oddny again, walked toward her, walked around her, looking upward, then looked away, shaking his head. When he got back to me, he said, "Find Machine Man on Aphroditë be nonsense. Machine Men not transcendent. Machine Man with Dream woman?" An angry look, a threatening shake of the notebook. "Agent of Deep Time? Tell me or . . ." Or else.

I sat down so my face was at his level, and looked him in the eye, which seemed to make him uneasy, though my eyes are the most human thing about me. "Listen carefully, Mr. Teng kaï Kal. I have no idea what you're talking about. What the hell is a machine man?"

He tucked the notebook under his arm and stared at me for quite a while, eyes trying to drill into my head, then he said, "Machine Men emerge from Dream Time, travel to stars, see all wonders, come home to die, and leave all knowledge to Immortals. All gone. Long time gone."

Oddny whispered, "He's saying he thinks we came through time?" You could hear the word *impossible* in her voice.

His head snapped around to look at her, eyes wide, then back at me. "Dream woman smell is . . . penetrating. Distracting."

I snorted faintly. The poor bastard has no idea how much Ylva Johanssen pumped up the pheromones of her Body Double corps, in the interests of making scaly old me hot to trot. "Is she right?"

A troubled look. A shrug. "Machine Men no transcendent. Immortals no transcendent. Surely not Dream People! Deep Time souls on Ares? Maybe so. Titanides say . . ." Then a return of the angry look, a narrowing of his eyes, as of suspicion, of *tricking me!*

I said, "Can you see all this doesn't mean a damned thing to either of us?"

But Oddny said, "The sequence . . . Dream Time, Machine Era, Immortals, Deep Time . . ."

A grudging look of understanding, "What you know else? After Deep Time?"

She said, "Here and now?"

He said, "Where you think people of Zeios come from? Who made we?"

I said, "I bet the answer's not along the lines of *God*, is it?"

"And who are the Deep Time souls? On Mars, you said. Martians?"

Sirens began wailing far away, just as a pearly light began twinkling in the slice of sky visible through the high windows of our warehouse. There was a banging from the door, and our interrogator looked frightened, turned away and ran, shouting something in that godawful rendition of Greek. The door opened to let him out and banged shut, bolts crunching in the locks.

More shouting. More sirens, and louder now. "Now what?" When I stood on tippy-toe at the window, I could see a molten star dripping high in the sky, throwing off a milky radiance bright enough to cast shadows through the orange light of Jupiter and the Sun. From the spaceport, a roar, and, one, two, three, things like missiles lifted off. Not missiles, no. They looked more like mid-twentieth-century jet fighters, like F-104 Starfighters propelled off their pads by solid fuel rockets, turning, dropping the boosters to continue onward, spewing bright jets of brilliant blue flame, turning toward the molten star, which ripped open, expanding into a black patch of sky through which I could see stars. One of the Starfighters fired a small missile toward it, a speeding fleck of white light, but before it got there, a squadron of flying saucers came whirling through.

I looked away, looked at Oddny, and said, "You know, if Godzilla comes trampling over that cityscape some time in the next five minutes, I won't be a bit surprised."

She nodded, and said, "I wonder if it's possible for a Body Double to lose her mind and have hallucinations."

When I looked back at the scene in the sky it was in time to see a green ray, straight as a laser beam, spring from one of the saucers and pick off the speeding missile, which ended in a misty globe of light. Then it took out the rocket ships, one, two, three.

The sirens were still wailing and I could see crowds of little people, running through the streets. That sound? Screaming. The saucers descended, formation breaking apart, going in different directions, swooping over the rooftops, firing their rays down into the city. Wherever the rays touched, there would be a misty explosion.

Oddny said, "You'd better get away from the window, Mr. Zed. Flying glass could put your eyes out."

But . . . I want to watch . . . There was an explosion nearby, making the building shudder, putting a long sinuous crack across the window in front of me. I backed away toward a solid wall. A patch on the big door through which we'd been delivered turned hazy green, shimmered, shivered, and dissipated away into a hole with glowing edges. A little man dressed in a plain leather harness and close-fitting silver helmet, holding an obvious ray gun in one hand, stepped carefully over the hot metal.

Spying me, he shouted something over his shoulder, then ran bright eyed to stand before me. "By Hera, the spies were right!" It was an accent would do Ronald Colman proud. "The Jovians *did* find a Machine Man on Venus." Then, he turned a stunned look at Oddny, who smiled and struck a pose.

The Titanides in their plain leather harnesses managed to get the warehouse door open so we could step through to the loading dock, once they'd rayed off our chains, down to the crater-pocked parking lot where a ten-meter-across flying saucer was parked. Here and there were gaily feathered and brilliantly bejeweled Zeian fighting men, sprawled dead among their weapons, hacked bloody with swords or with limbs burnt away, presumably by fiery green rays.

I dismissed them, trying hard not to think, "got what they deserved," and looked instead at the landed saucer. It was a flat, grayish metal disk with a matte finish, clear dome cockpit lifted open on a hinge. There was a control panel inside, and several other seats, which little men were working quickly to dismount.

The Titanide who'd rescued us gabbed with his crew, then turned to us, and said, "Honored Machine Man," a sidewise look at Oddny, "Machine Man and companion, it will take us a short while to make room for you, then we can be away."

I gauged the space would be there with the seats gone and the dome shut, and said, "What about your people?"

He seemed to smile. "As soon as we are away, other ships will land and pick them up."

"Good. I wouldn't want any harm . . ."

He said, "The life of a transcendent Machine Man is more important than any number of Titanides. Even if I . . ."

Oddny muttered, "He knows who matters . . ."

I rolled my eyes. "That's silly. He has no idea who we are." As if who we really are could possibly matter, wherever/whenever the hell we may be!

She said, "He thinks he does."

A gabble from the now stripped saucer, mass of crewmen spilling away, and the little man gestured us up under the dome, where we lay down, carefully curled inside the gasket seal, heads down. We were joined by a slim, beautiful woman, hair as shiny and black as an obsidian blade, who sat in the remaining seat, hands on the controls.

The little man worked a lever that brought down the dome with a soft hiss, pressure differential popping in our ears, then he banged a little fist on the plastic and gestured to his pilot, up, up and away.

The saucer lifted without any sense of movement, other than the sight of ground dropping away, tilting as it fell, gravity rock-steady toward the keel. Oddny said, "No field modulus exhaust light. Maybe better than what the firefoxes left us?"

The little man stood and came to stand inside the curve of our two bodies, while we sat up as best we could, half reclining, heads brushing against the hard plasticky stuff of the dome. "I," he said, "am Kam-Ren Vaad, commander of the First Titanide Space Fleet, commodore of the Jovian Emergency Intervention Squadron. This," a gesture to the pilot, "is my most beloved companion, Princess Tah-Ren Aruae of the Sanhejazi Lineage."

He went on, "Titanide scholars have learned the names of many great historical figures from that long ago age, Honored Machine Man. Perhaps they will know of yours?"

Who might *you* be? he asks. Anyone that matters? That fabulous *Man Who Counts?* And what to tell him? Burke the Jerk, little boy everyone scorned? Alan Burke, who one fine day, with a few of his very good friends, Changed Everything, and then was destroyed because he trusted the world a little too much? Or . . .

I said, "They call me Mr. Zed. And this is *my* most beloved companion, uh . . . Oddny. Oddny, who was once a Body Double of . . ."

Who *are* you now? Not the Body Double of Ylva anymore, surely? Who do I *want* you to be? Ylva Herself? No. I want . . . an image of lost Sarah's face came and went like a fleeting ghost.

Oddny, with some mixture of horror and joy, said, "Mr. Zed! I am not . . ."

You could see the two Titanides react as though struck, faces filling with strained incredulity. Kam-Ren Vaad gasped audibly, looking at the woman, then back at me. "Mr. Zed." Disbelief.

The woman, Tah-Ren Aruae, white as a cartoon ghost beneath her sparkling black hair, said, "The *first* Machine Man!?"

Vaad said, "Who would have expected such a . . ." then he turned to face Oddny, face filling with wonder. "And you. You would be an avatar of the Goddess Ylva?"

Goddess Ylva. Oh, great bleeding Christ.

Oddny said, "I am one of her Body Doubles, yes. One of many."

"Imagine," said Aruae from her pilot's chair.

"No need to imagine anymore," said Vaad, standing stunned between us. "Now we can *know!*"

Up we rose, away from the little world of the Zeians, up to that starry rip in the sky, rip already beginning to contract back into a bright, dripping star, other saucers rising, pursued by missile-firing rocket starfighters, until we flew through the hole in joined formation, sky suturing itself behind us.

In this new sky, this starry sky, yellow Saturn hung like yet another Chinese lantern lit from within, rings and all, in the distance the substantial marble of a smoky red world, quite obviously Titan. I said, "The *rings* . . ."

Vaad looked up at Saturn, and said, "When the Deep Time souls on Mars made men, and made all the worlds fit for us, they recreated the rings of Saturn as well, for reasons of their own."

The souls who made men, for reasons of their own. Gods of myth? Somehow, I found myself doubting that. And doubting it, I simply asked.

Human beings, he said, began as if in a dream, and they dreamt on until they made machines that could dream as well. The men and their dreaming machines escaped from Earth, and, in time, learned what was real and what was not. Mighty in their self-confidence, arrogant in their sense of power, they went out into the larger universe, where they were torn asunder and destroyed, until the few survivors limped home like whipped dogs.

Home where they became pale, genderless, Immortal beings, afraid to venture forth ever again, afraid to do anything but live forever. Almost forever. Some died by mistake, others from boredom, and still others lay down to sleep, never to waken again, while the engines of the Earth grumbled to a halt and the sun guttered for want of refueling.

As we rode down through the swirling cloud formations of smoky red Titan, I was struck by memories of my own *real* Titan, from that first landing I made in the *Benthodyne I* prototype, when . . . Ah. *Real?* If what this *Titanide* says is really so, this is the real Titan as well, changed by those so-called souls on Mars. Terraformed? Not really possible. And yet . . .

Kam-Ren Vaad said, "We were surprised to the point of disbelief when our agents among the Zeians told us a Machine Man had been found on Venus. A Machine Man and a Dream Woman, still incredible even when they transmitted images. I . . . how did you come here, Mr. Zed? You of all possible Machine Men?"

I told him about the derelict ship floating in the atmosphere of Uranus, and about the mysterious hyperdoor. "Something of yours? Like the door in the sky between Jupiter and Saturn?"

Vaad and Aruae exchanged a long look, then he said, "Not one of ours, no. Something we tried to steal."

In a wistful voice, Aruae said, "More successfully than we thought."

When we burst from the lowermost cloud deck, the surface of Titan was a breathtaking vista, sprawled below in rust-colored light, mountains and plains, hills, fields, rivers and valleys and sparkling gray seas. Not like the *real* Titan, so cold, so dead . . . but the Titan in my memory had all those things too, more of a world than anywhere else in the solar system other than Earth itself.

I always dreamed of seeing another world, a *real* world, before I died, dreamed that dream all my life, dreamed it with such an intensity it was the thing kept me alive, long past the day I should have slipped under the sod forever. I worked for the day we would build a ship that could slide across the gulf between the stars, to the dead old earthlike world astronomers told me circled Alpha Centauri B, to the tantalizingly "habitable" world our instruments said was way out at Delta Pavonis.

As the saucer squadron swept down toward a gleaming marble city, a city of spires and domes and step pyramids, much like the ones the Zeians had, but cleaner in form, Vaad asked me a series of questions that boiled down to, How did you become the first Machine Man?

I thought about it, then told him a simplified version, about those unexpected side-effects of the antirad drugs, and then about my discovery of the lost firebox ship on Hector. "You told me the Machine Men went out to the stars and came home beaten. Was it the fireboxes did us in?"

"We only know a little about the end of the Machine Man Era. The Immortals didn't care to remember what happened, and consequently didn't pass it on. But no, it wasn't what you call fireboxes that did it. They were merely the servants of larger masters, as I understand it, and all that happened is, humanity got caught by an unfortunate crossfire in the war between the Starfish and the Spinfellows. We don't know anything about them other than their names, and that they fought for a long time, for unknown reasons. The galaxy is theirs. Maybe the universe beyond."

Hubris, they say, invites the wrath of the gods.

As with their spacecraft, the Titanides had better technology on the ground than their Zeian counterparts, and rode us through their capital city on something like a flatbed truck, but one that floated a meter or so above the pavement, drifting along in silence, taking us along avenues lined with staring, whispering throngs on the way to one of their marble palaces.

When I asked, Vaad admitted the technology wasn't theirs to be proud of, merely found, sometimes stolen. "I should have guessed," he said, "the start of the Machine Man Era might be something similar. So long ago, though, I thought surely . . ."

"And yet," said Aruae, "we knew from our history the Spinfellow-Starfish war had been going on since before primordial slime came to life on Earth."

Here, unlike before, more of the attention was on me, on what I was, than on Oddny's lovely pieces and parts. More serious, these people? No. Merely more worshipful of the past. And me, the First Machine Man, the Wonderful Mr. Zed? A little bit, I gathered from Vaad and Aruae, as though I were Jesus Christ resurrected to a cavalcade through the streets of twenty-first century Rome.

Imagine the atheists equivalent among them, shivering and wondering what to believe and what to repent.

The place they took us was like a vast banquet hall, with doors so tall we only had to stoop to enter, a ceiling so high we could stand erect. They'd pulled the furniture aside to the walls and spread layers of blankets on the middle of the floor, each blanket no larger than what you'd give a baby, but soft, and enough of them in aggregate made a decent place for us to rest.

Aruae said, "I suppose you're both hungry? The Zeians aren't known for the quality of their hospitality."

I laughed, and so did Oddny. She's getting better at it, better at everything human, with the passage of days. That flat affect, that *obedient* affect . . . It's easy to imagine you'll be content with a woman who does what you want, until you meet one who knows what she wants, does that, and it turns out to be what you wanted, after all.

I was beginning to remember what that had been like in the long, long ago.

Dinner turned out to be platters of steaming steaks, meat sort of halfway between beef and chicken, maybe a little bit like ostrich, though it'd been so long since I had *that* I couldn't really remember, steaks smothered in some kind of spicy green relish. Among the vegetables were marble-sized things like some improbable cross between baked potatoes and Brussels sprouts, suspended in a hot clear gel that tasted something like cheap margarine and a little more like K-Y Jelly.

I ate it all, hardly noticing, and watched Oddny eat, ever so delicately, and with rapt enjoyment of each taste, every new sensation. Alive for the first time in her life? Hard to know. Hard to ask. And how old is she? I thought back to the night she was first delivered to my bedroom door. Two years? Maybe a little more than that? God. I imagined her coming to life in a clonage vacuole, more or less like awakening in a coffin full of bloody mucilage.

What must that have been like?

Why am I afraid to ask? I've seen it done, I *know* what it looks like, seen how they react when they see first light. Seen the amazement, bewilderment, confusion.

I think if I ask, it'll make her unhappy. Afraid that she'll remember how she was delivered to my bedroom for ceremonial rape and unwilling orgasm, afraid that she'll remember the terrible rider in her head, my happiness her will to live.

Oddny looked up at me, eyes aglitter, wiped the shine of K-Y Margarine from her lips with the back of one hand, and smiled. "I used to wonder," she said, "at the evident pleasure with which you ate. I've begun to understand."

After dinner, as we drank from what looked like used paint buckets filled from entire bottles of a gassy beverage that tasted horribly like cheap muscatel mixed with quinine water, the Titanides set up a projector that tossed a cube of misty light into the air before us, a cube filled with 3D images. "On the trip back from Jupiter," said Vaad, "I told you something of the broader outlines of history, filling the billions of years from your time to ours."

"How many billions?"

He shrugged. "We just don't know. Three, maybe? The Immortals meddled with the sun, kept it lit and Earth's geochemical cycle running for a long, long time."

"They erased the evidence," said Oddny.

"Yes," said Aruae. You could see the curiosity in the tiny woman's eyes, her questions obviously similar to mine: What can it be like to be such a creature? But a woman will wonder about it differently than a man.

The cube of light filled with the shape of a slim young girl, a little more than a child, you could see, but not much. Slim, pale, without breasts, short mouse-colored hair on her head and between her legs. Pretty, I suppose, but not much else. Vaad said, "This is what Immortals made themselves to be, not long after the end of the Machine Man Era. All we know, we know from scraps of old art found among the last ruins they left, on Venus and on Earth's moon."

I said, "What's on Earth itself?"

"Nothing. At some point, it was burned clean, seas boiled, crust reduced to lava. It's cooled in the two hundred million years since, but . . . stone and salt water, air that's mostly nitrogen and carbon dioxide. If the sun were still as hot as in the past, no one would be able to go there."

Oddny said, "Were they all women?"

Aruae said, "No. They made themselves genderless, and the female appearance is merely an illusion from the absence of male externals. If they had anything internal, or any mechanism for sexual activity, we don't know about it."

Vaad: "To us, these people aren't even the stuff of legend. We learned about them only recently, through archaeological research on the inner planets." Like Sumer and Meluhha, forgotten to history, resurrected by science. "No, all we knew about them was . . ." The image in the cube swapped out for one of the supposed kaldanes, like a frightful head riding on the back of a giant crab.

I said, "We saw an image of one of those aboard the derelict ship at Uranus, surrounded by spearmen of your race. It looked to be a little taller than you."

He nodded. "Maybe a third of your own height."

I wonder how I would feel, confronted by any sort of human being close to twenty-five feet tall? I'd feel afraid.

Aruae said, "These are what we call the Souls on Mars."

Oddny said, "Why souls?"

The woman smiled. "Old legends. No more than that. In holy books, the story is, the Souls on Mars knew their kind would one day be gone, and they made a successor race to live on planets they created around Jupiter."

"So where did the Souls come from?"

Vaad said, "From what we've been able to piece together, they are what's left of the Immortals."

"What changed them from that to this?"

"You'd have to ask them. We don't know."

I said, "They look like something from a story."

"A Dream Time story?"

"I guess you'd call it that."

He frowned. "Maybe they knew the story. And do we . . ." You could see the idea made him unhappy. These beings are the gods who made men, made us, and to think it might have been something trivial . . .

I said, "Maybe. Are they still there on Mars?"

He nodded. "The Zeians took up space travel more or less on a whim, just a few hundred years ago. Established commerce among their four worlds, settled the empty world they found around Saturn, sent ships to explore Mars, Earth, and Venus . . ."

Oddny said, "That doesn't tell us about the Uranus vessel, or about the hyperdoors."

Vaad said, "A little while after the Titanide War of Independence, we started sending probes to Mars. Satellites to photograph the surface, then manned ships that set down in a remote place far from where the Zeian ships were lost."

"Why?"

"We could see whatever lived on Mars had technology beyond our wildest dreams. Technology we coveted." He waved a hand around, taking in the city, the whole of his little world. "Everything you see here, everything that makes us better than the Zeians, makes it impossible for them to come and put us back in their control, was the fruit of that first expedition."

"I take it there was another one."

"The first expedition identified what we thought was an interstellar vessel from the Age of Immortals, one of the ships they used on resource expeditions to the nearby stars. Some theorized further, that it might be a Machine Man starship . . ."

Aruae said, "Whatever it was, we wanted it."

"Especially after the second expedition sent an encrypted report about other things they'd found. When we found out about Martian Transcendence Portals . . . well."

Oddny said, "Is Transcendence what you call time travel?"

Another shrug. "That's what we think. It's not what we know. Our scientists think the only way to travel faster than light is by traveling in time as well."

I said, "Not quite," and told him a little bit about theoretical travel through the conformal and probabilistic spacetime matrices.

"So they knew these things at the beginning of the Machine Man Era? It would explain a great deal." It seemed satisfying to him.

I said, "Only suspected."

Aruae said, "But then, you were the *first* Machine Man, Mr. Zed."

"Am I legend or merely archaeology?"

Vaad said, "Both. You are the Fountainhead in Zeian holy books . . ."

I heard Oddny's curious indrawing of breath.

Aruae said, "The first expedition brought back a 3D light sculpture of you they found in an abandoned city on Mars. I'll show it to you later. It's quite pretty."

Damn me! *This'll* be one hell of a burden, if I ever get home . . .

Later, Oddny and I sprawled in the midst of our Titanide blankets, alone again at last in the smoky red quasi-dusk of a Saturnlit evening, sun having gone down while the ringed orb still hung like a yellow painting in the sky. No idea how they managed that effect.

Oddny lay propped up on an elbow, one leg extended, the other raised at the knee, her face still suffused from our recently spent passion, eyes alive with . . . well, alive will do. You could see the *person* in her looking out, so different from the serene-faced clonegirl, alive only when animated moment to moment by Ylva's dead soul.

When did I start thinking of Ylva that way? And when did this one come to be a different being? She smiled, and said, "I like it when you look at me that way."

I felt a slight pang of shame, but . . . "What way?"

"When you look at my face and see *me*." She laughed. "I don't mind when you look at me other ways, Mr. Zed. And look at something besides my face."

The pose, I knew, was almost certainly something Ylva taught her, something learned by trial and error and added to a machine's rule sieve, or perhaps remembered from the dead woman's lost life. If I do *this*, it will make him feel *thus*. I wondered if Ylva's husband had liked her to pose like that as well.

I said, "It was easier when you were just a . . ." I bit off the last word, which might have been *thing*. Even when she was a thing, she probably had feelings of her own.

Who was it wondered exactly that about men? Sarah and I lying in a sweaty tan-

gle one fine evening, a few weeks after our relationship began. Lying in the dark, talking about who we'd been, about things of the past, people of the past. By the time you're forty, there's been plenty of time for past to accumulate.

Sarah, after wondering *why* her ex-husband had done all those terrible things to her, looked at me, eyes liquid glints almost hidden in night, and said, "You seem real, Alan. Are you? Really *real*, I mean . . ."

In the here and now, Oddny said, "Don't be sorry, Mr. Zed."

I suddenly wanted her to call me by my real name, but . . . no. Alan's not my name anymore. Zed will have to do. Mr. Zed, last man, first Machine Man. That's me.

She said, "I don't mind that I was made from nothing, just to serve you and help you be happy. This interlude . . ."

"Does it have to be an interlude?"

Her face grew a little remote for just a moment. "What's happened to us hasn't changed my nature as an accelerated clone. If I can't get back to Ylva, then, when I die, in five years or so, she won't remember me, and what I was will be lost."

That hurt. All she'll be, in so short a while, is memories in a mostly computer cyborg? Or, worse, in the fading recollections of a potentially immortal Machine Man? I wondered if I would still be alive when the evocatively named Starfish and Spin-fellows, whoever they were, chewed us to bits and sent us creeping home.

Would I become one of those genderless boygirl Immortals then? And later on, a hideous kaldane dreaming on Mars? Hell, am I, even now, somewhere on Mars? Someone has to be *last*. What if it has to be *me*?

She said, "I love to watch your face when you're like this, so very far away, eyes looking into some other place, alternately smiling and frowning as fleeting thoughts cross your mind and are gone. It's something I'll carry with me for . . . no, not forever. . . . afterwards."

"Is that what you really want? *Enosis* with Ylva?"

"It's my only hope." A brimming of something in her eyes, I don't know what. Her only hope a return to what she was, a sex toy ridden by a literal ghost in an actual machine? And what would she want if . . . only if . . . Don't ask. She might tell you.

I said, "I guess if our Titanide hosts are telling the truth, our only hope of getting home lies somewhere on Mars."

She nodded, then said, "Make love to me again, Mr. Zed. Please."

I wanted to ask why, but . . . hell, I *know* why.

The next morning, Vaad and Aruae took us before the Titanide Council, which had a couple of dozen members, mostly older-looking men and women, ridiculous in their leather harnesses and silver helmets, paunchy, slack-bellied folks like something out of a German B&D pornofarce, the sort of thing had been popular a hundred years ago, before the Internet got started.

I remember, back in the early days of ERSIE, I testified before some US Congressional committee or another, a dicey proposition since some people were trying to assert I was still a US citizen and a prosecutable criminal besides. The main thing I remember was, they weren't trying to get at the truth, merely trying to count coup on one another, preening and grimacing for the cameras, as they jockeyed for future campaign contributions.

I'd used those Congressmen's arrogant foolishness against them on that long ago day, and, listening to Vaad's whispered translations, I supposed I could do the same now. What they were afraid of, mainly, was a bad outcome. What they had to be convinced of was, the possible rewards far outweighed the risk.

You know: If you invest fifty dollars now, I guarantee a payoff of ten thousand dollars in six weeks . . . Okay? Great! Now, in order to process payment, I'm going to need your bank account number, user name, password, security access code, and

challenge questions. The password is your mother's maiden name? Wow! Who'd've guessed *that* . . .

What trumped the congressmen's dreams back then was simple. I had the secret of the field modulus device tucked away permanently beyond their reach. Now?

Eventually, the haggling and wrangling and all-around bullshit reached the point where it was Oddny's turn to speak. When she stood, it quieted them, and shortly after she began to speak, you could hear the proverbial pin drop.

What it boiled down to was, without access to a proper computational facility, I'll have to give you a simple outline of the process, but the way time and FTL travel works is as follows . . .

It ended with her saying, All we really need is a working model to reverse engineer. The rest is simple, just like the firefox space drive. It took another hour of general wanking before they voted to authorize Mars Expedition Three.

We settled back in our blanket bed for a peculiar but nice-enough lunch, and I said, "You did a good job with that, Oddny. *I'm* convinced."

She said, "I'm sure it'll work, Mr. Zed. These people have better computers than humans had before Ylva and her like came along. And I may not have access to the databases anymore, but I *do* remember a lot of this stuff." She smiled. "If not, you've had sixty years to become a good engineer. I think you know more than you're willing to admit."

Maybe so. Hate to jeopardize my reputation as an overachieving underachiever. I said, "What happens if we succeed? Go home?"

A level look. "I think that would be best. I haven't got all that long and . . . you'll need an antirad booster, sooner or later."

I'd been trying to ignore that. Sooner or later, as she said, my scales will start to slough off and be replaced by real human skin. My hair will start to grow and . . . I dunno. I might live another thirty or forty years after that. "Will your sense of self persist when you're . . . re-merged with Ylva?"

She said, "No one knows. When you wake in the morning, are you really the same man who went to sleep?" She laughed, "It's all I've got. And it's more certain than some fantasy Heaven, if you ask me."

Ylva talks like that, too. Sure, I'm dead. Dead, buried, and rotted away to worm castings. All except for a few ounces of nerves pickled and packed in among the circuitry. But those nerves believe they're *me*. Why should I bother to argue the point? *I'm* alive, whether the real Ylva is or not.

"Besides," said Oddny, "I'm accumulating some wonderful memories now. It would be selfish of me not to share them with the others."

I felt cold fingers on my spine.

We left Titan the way we came, hunkered down under the bubble canopy of a flying saucer, Aruae piloting, Vaad crouched between us, at the head of a small squadron of same, crewed by survivors of the First Expedition, the ones who'd not disappeared along with the Second. The ship climbed out through redcloud skies, climbed up into starry black space, making for a point in the sky to one side of wan-lit, inner-glowing Saturn and . . . there.

The dripping star, hanging in the sky once more.

Vaad said, "It's the only one we have, tunable to a variety of solar destinations, but . . . we haven't been able to make another."

Oddny said, "I'm surprised it was portable, given it has to be crosstied to all its destinations."

"So you say. We didn't know. In any case, what we took from Mars was no more than a seed. Until we'd read through a few thousand Immortal reference books, we had no idea . . ."

The door opened and we went through, red Mars on the other side, hanging ruddy pink in the sky, criss-crossed with a spiderwork of canals. Schiaparelli would be happy to see this, I thought. Not to mention Lowell.

The real Mars, *our* Mars, was a rugged red moon seen from orbital height. If you looked toward a limb, you could see there was an atmosphere only by the line of high haze against the black of space. Here, there was a blur of blue at the edge of the world, and pinkish clouds floating above the red desert.

We went hissing down through the atmosphere, crossing swiftly above blue steel waterways, sweeping through a vast, deep canyon system, hiding ourselves in shadow. I wanted to think it might be Marineris or Coprates, someplace I'd been before, some landmark held over from times gone by but . . . no. Too much time. And this canyon had a muddy red river at its bottom.

We landed, the canopy opened, and the Martian air was thin and cold as razor-blades in my nose, but breathable. I wasn't surprised to see goosebumps all over the Titanides, Aruae's lovely tan nipples puckering to little knots, Oddny shivering, holding her arms around herself.

I looked down at my own lizardy hide, and said, "I'm usually annoyed I have to look like this, but . . ."

Oddny said, "You're prettier than you think, Mr. Zed."

Even when I was human, and women told me that, I didn't believe them.

"This way," said Vaad, "the entryway is here. Quickly, before we freeze!"

The crewmen trooped our way, ray guns held at ready, queuing up at a metal hatch set flush in the face of the canyon wall, long plumes of hot breath rising above their heads. Vaad spun a wheel and the hatch swung open, revealing a redlit corridor beyond. The men went in one at a time, Oddny and I coming last because we had to crouch low to pass through the portal, which was, at best, a meter high.

I went through head first, expecting I might have to crawl a long ways in the low tunnel, doubly glad for my tough, scaly skin and—

Splat.

On my face on rough gray concrete.

What the . . .

I squirmed to a quick crouch, suddenly afraid, squinting into bright yellow light, craning my neck around so I wouldn't bump . . . uh. No ceiling. Not anywhere nearby. Maybe far above, far far away . . . In the corner of my eye, I saw Oddny scrambling to her feet, reassuringly herself, reassuringly naked and . . . "Mr. Zed!"

I half rolled toward her, then onto my feet, looking the way she faced, face lit with alarm. I . . . oh, shit.

The kaldane barely came above my knee, bulging lidless blue eyes fixed on me, breath whistling through a twin-slit nose, anal mouth pursed as if for a perpetual whistle, long, thin many-jointed arms with sawtooth chelae lifted menacingly.

It really did whistle, soft and low, before it said, "So. Machine Men! I thought the little bastards were lying."

Its voice was flat, with a kind of midwesternish . . . who . . . Raymond Massey? Ridiculous. And, ever the loon, I said, "Ghek? And, what? No rykor?"

I don't know what I expected. I act like that to cover up my ever-present sense of utter incompetence. What it did was make a long, whistling giggle. "No, my name is Wark Fan'shih, and I know more than you think." It looked us up and down, focusing longer on Oddny than me. "Well, definitely not a female Machine Man, and hardly likely to be a Dream Person." At me again, "Who might you be?"

I said, "You can call me Mr. Zed." No reaction. Uh-oh. "And this is my good friend and colleague, Oddny Ylvasdottir."

Nothing to read in those orby eyes of course, but it looked at her, stayed looking at

her. "Ylva? Ylva Johanssen?" Then at me again. "I'm sorry. I'd forgotten the Honored Ancestrix's Companion liked to call himself Mr. Zed . . ."

I thought, Well . . . *crap*. Now what?

Towering over the little monster, Oddny said, "You *do* understand I'm not actually Ylva Johanssen?"

Its mouth stretched sideways into a peculiar grimace I thought might be an attempt at a smile, showing an irregular assembly of toothless pink gums. "Yes, I see. A Body Double, then?"

"Correct."

"Still, an aspect of the Revered Ancestrix, if not quite so dangerous to ongoing reality."

Oddny said, "I know Ylva Herself is nowhere nearby, or I'd . . . hear her."

"Interesting," it said. "No, the Revered Ancestrix transformed to an Imago when she destroyed Earth."

I said, "Imago?"

"A software ghost whose continued existence is supported only by the noosphere."

"Oof."

Another grimace. "I see you understand."

Oddny, eyes filled with subtle pain, said, "Why did she kill herself?"

"No one knows. Nor why she chose to take with her all the Immortals except we few who'd moved to Mars." It was incapable of anything like a facial expression, but you wanted to read some kind of wistfulness into those huge eyes. "We weren't planning to stay here once we finished our Second Flowering project, but . . . well, there wasn't any warning."

I said, "So you and your kind made the little people living around Jupiter and Saturn."

"Their ancestors. We set them up on Mars about seven hundred million years ago. They were moved to Jupiter some little while back, after we lost interest in maintaining the project and Mars started to revert."

"How many of you were involved in this?"

"In the beginning? Maybe a few thousand. Most long ago killed themselves, of course. All but a few of those who remain lie dreaming in their cells, waiting for who knows what, maybe nothing. I'm probably the last Immortal up and about, these days."

The Last Immortal, and I am . . . uh. I said, "Am I among the dreamers, or merely the dead?"

"You . . . ? Oh, I see. No, Mr. Zed. If I remember aright, you never came home from the Wars."

Cold chill, then. "Killed?"

"I don't think so. The story is, you cast your lot with the survivors of the Spinfellow empire, with the last of the Starfish, the optimods and all the robot children of the Machine Man Era."

"But not Ylva?"

"My supposition is, you told her to look after the surviving humans, and she did that by creating the Immortals."

Oddny said, "Why'd you make the little people?"

A soft chuckle. "Out of boredom. Nothing more."

I could imagine it: So much time. So little to do. It's no wonder they started killing themselves. It's no wonder Ylva killed them in the end. "What did you do with Vaad and Aruae? With all the crewmen?"

"I sent them to join the Second Expedition."

"To Uranus?" The people onboard that ship were dead.

The big eyes fixed on me for a moment. "What do you mean, Uranus? I put them in a closed time loop."

That shut me up for a minute, bouncing around among staggering implications, then I told Wark Fan'shah about the derelict, and how we'd gotten to here and now.

Great eyes simply staring. It said, "Oh, that's bad," in a sibilant whisper.

"Why?"

"Ahhh. The technology is old. Very old. It doesn't always work the way I expect."

Oddny said, "And you dumped a piece of the future, your own present, into the direct past."

Conformal paradox? I wondered.

It said, "Oh, that's not the problem. The problem is that *you* got here at all. If the derelict went to the past, and you found it, a new thread should have emerged from that cusp, paralleling my own, and you should have wound up in the future of *that*. As it is . . ."

I said, "As far as I know, conformal time travel is impossible."

It said, "As far as I know too, but the chances . . . the dangers . . ."

"What are you going to do with us?" said Oddny.

Long pause. "Well . . . I can't send you back the way you came . . ."

I said, "Why not?"

Yet another grimace. "Even if it worked, which is unknowable without making the attempt, that would mean we were ourselves stuck in a timeloop, which I may have created when I tried to put the Second Expedition into same."

"Big problem."

"Yes. My fault. And my problem to solve. No, even if I could, you two, especially you, Mr. Zed, now know entirely too much of time to come. You might forestall it, or accelerate it, or guarantee it . . . all of those things might nip my own thread off into a loop and . . . no. Too risky."

"So?"

"Oh, I suppose I'll put you someplace where you can, hopefully, spawn a new thread of your own. One too early to affect me."

There was a soft ripping sound, and a door opened in the air, door opening on darkness, a cool wind blowing in, reeking of damp, decaying vegetation. "Come," said Wark Fan'shah, gesturing toward a tear in the fabric of spacetime, "Time to go."

An invisible hand pushed us through the door in the air, inertial fingers pulling us down hard on the other side, to stand shivering in the cold, damp dark, tiny sharp bits prickling underfoot. Light shone through the rip in spacetime, beyond it, Wark Fan'shah lifting a crabclaw as if in farewell. The kalandane called out, "Good luck . . ."

The rip sutured itself shut and was gone, leaving us in soft-whispering night.

I heard Oddny take a deep breath, then she said, "The air smells poisonous, and . . ." I could see her dim outline bounce gently up and down, white skin gleaming in some wan glow. "Gravity right around one gee. We may even be on Earth."

I sniffed cautiously. "Hmh. Mold and . . ." Oddly familiar, as if . . . oh. I said, "Hydrocarbon combustion byproducts." My eyes continued to dark adapt, until I could see the outline of trees around us, skylight filtering through, brighter in some directions than others. Starlight. Moonlight perhaps. That orangey . . . "Let's go this way."

"Why?"

"Because something in me recognizes sodium vapor light." I could see the glint of her eyes looking at me. "Streetlamps."

"So you think you know where we are."

I said, "Come on."

We walked off among the trees, ground sloping underfoot, tending downhill, while the night grew steadily clammier, the breeze colder, blowing in our faces. Finally,

woods gave out abruptly and we were standing at the top of a long, grassy hill. All around the bottom of the hill and lining it along one side were small, boxy houses, houses of a sort I hadn't seen since leaving Earth for good, late in the second decade of the twenty-first century.

"Mr. Zed?"

I sighed. This place. This time. So hard-focused in memory, so ordinary and so unforgettable.

"Do you know where we are?"

"Yes. Midway up the eastern seaboard of the United States. Not far from Washington, DC. As for *when*..."

Oddny looked around, at the scenery, the houses, the starry sky overhead. "The memories I have from Ylva look a little like this."

I said, "She was a child a half century after me. Things changed."

Beyond the houses at the foot of the hill, a car slowly grumbled along the street, headlights illuminating dark corners obscured between streetlamps. As it passed, I saw a dark shape blur before it, car slowing abruptly, then speeding on. Cat? Raccoon? I said, "Those flat fins at the back . . . maybe a 1959 Chevy Biscayne? My dad had one of those when I was a kid."

"So . . ."

"It's a hint when precisely we might be." As if I didn't already know. I said, "We better find some clothes. If anyone sees us like this, the police will rape you, then turn us both over to the Air Force."

"Air Force. Why . . .?"

I laughed softly. "Look at me, Oddny. Do I *look* like a human being? The Project Blue Book people will shit themselves. Come on. That car looked pretty new to me. And if it's some time not long after 1959, there will be clotheslines in every yard. Some people were too lazy to take them in at night, and the dew will just have made them damp."

She said, "Are we stranded here?"

I shrugged. "If we are where and when I think we are, that damned idiotic kaldane was going for another timeloop. Which shows he hasn't got a clue how this stuff works."

"Do we?"

"We damned well better."

It turned out to be surprisingly easy to make a living in a here and now I remembered as difficult and dangerous, scary and so hard to understand. Perspective, I suppose. Selective memory. Once we'd stolen clothes from unwatched clotheslines, we had a largely empty world to ourselves. Tracts of scruffy woodland with no one in them. Homeless people still decades in the future, hoboies largely confined to the movieland mythology of the past.

All those endless square miles of little boxes. Children confined to so-called schools. Housewives drinking coffee and picking feuds with each other. Hardly any deliverymen left to dally with, now that the milkman had been bankrupted by the chain supermarkets and newspapers were delivered in the dark by children. I remember my mother and her friends were driven to near lunacy by the isolation of Marumsco Village, no one to talk to but babies and each other.

Was it just a coincidence Wark Fan'shah dropped us here and now? No way to know. No one to ask. Coincidence seems improbable.

Up along Route One, just south of the Occoquan River, there were ramshackle businesses, trailer parks, older tract housing where poorer sorts of white people had to live. I went there to get money, leaving Oddny in hiding, and robbed a drunk walking by the railroad tracks. He saw me plainly by the light of a full Moon, of

course, slobbering and cursing me as I turned out his pockets. Called me a boogie, which let me know where the police would go looking for the assailant, if they bothered at all.

One chilly morning, we went to the Rexall Drugstore, not far from the original entrance to Marumsco Village, at the beat up fragment of a shopping center on Route 123, what denizens of the early twenty-first century would call a strip mall, with its Texaco station, Handy Dandy No. 2, and Manny's Moon Pizza, and bought copies of the newspapers they had.

Amazing variety. *Washington Post*, the *Evening Star*, the *Daily News*, *Journal Messenger*, *Potomac News*, others I didn't remember at all. When had they died, with their conglomerations of chatty prose?

The date was December 3, 1962, and the news wasn't what I remembered at all. Similar, but . . . I remember Vostok 3 and 4 had flown their co-orbital mission in August, but hadn't the next two been 5 and 6, that last with a woman, almost a year later? Apparently, in this particular here and now, Vostok 5 had gone aloft with a two man crew on Thanksgiving Day, and Pavel Popovich and Vladimir Komarov were still aloft, rounding out their first week in space, complete with a live TV broadcast, with pictures from orbit of smoke from the fighting going on along the border between Austria and Hungary.

President Kennedy, said the *Post*'s lead story, was considering authorizing the use of tactical nuclear weapons if Soviet troops didn't halt their advance on Vienna within twenty-four hours.

In my memory, by this time the Cuban Missile Crisis was already over and people were breathing a sigh of relief, realizing they might indeed live to celebrate one more Christmas.

The fat girl running the cash register, the one with pimples on her cheeks and dyed red *I Love Lucy* hair, who I vaguely remembered in a sort of double image, was staring at me, hesitating to take the coins from my hand, until Oddny leaned forward, and angrily whispered, "Please! My father is *very* embarrassed about his skin condition. It's not contagious!"

The girl mumbled a curt, "Sorry . . ." but still hesitated. I slapped the money on the counter and turned away. Stopped short.

Three boys had come in the store and were turning into the newsstand alcove by the front door, where the newspapers and magazines stood against one wall, near a comic carousel and paperback book rack. One of them, tall and rather plump, with stiff black hair sticking up in all directions, was already reaching down a *Playboy*, which, in these innocent days, didn't have a plastic wrapper. The shorter, good looking, brown-haired and snubnosed kid stood behind him, smiling, looking over his shoulder at a sleek, overweight, neatly airbrushed young model.

The third boy, longish black hair disheveled, dressed in rumpled, dirty clothes, blushed and backed away, turned toward the comics carousel, picking up one with a caveman and pterodactyl on the cover. *Turok, Son of Stone*? I felt a hard pulse of desire to join him at the carousel, thinking, Christ! I'd give anything to read those . . . and here, here and now . . .

The boy looked up suddenly, maybe feeling my eyes on him, stared at me hard, no revulsion, just curiosity and . . . resentment? Why? I didn't hate adult men, I was merely afraid of them, and what they might do. His eyes moved on, falling on beautiful Oddny, faltered, fell away, looked again longer, blushed, turned away toward the comic book, turning his back, very stiff, very self-conscious.

I turned to Oddny. "What did you do?"

"Do? Nothing. Looked him in the eye."

Hardly nothing! The poor bastard is probably ready to faint with some combina-

tion of mortification and desperate desire. And he's already afraid that people, especially women, can read his mind.

She said, "Do you know those boys?"

I tried hard to conjure up a memory of this day. Too many such days. We came here at least once a week, to look at comics and drink chocolate Cokes at the soda fountain. God, I can taste them even now! Nothing like that in our latter-day world.

Would I remember a day when I saw a scaly faced old man looking a bit like Ben Grimm, a man with a really, *really* bad case of eczema? Probably not. How about a stunning beauty with nice big tits dressed inappropriately in rough men's clothing that didn't fit too well?

Maybe so. But I didn't. I said, "The big fat kid is named Larry, the cute one is Neal. The creepy one looking at comics is named Alan. The other two call him Burke the Jerk."

She gave me a spooked look, "Alan Burke? But . . ." Looked at the three boys again. I nodded slowly. "Yeah. Me."

"Then we're in your past? That doesn't gibe with what the kaldane said."

I said, "No, but when *I* was twelve years old, the Cuban Missile Crisis was over. Here and now, it's not. I have an inkling where Wark Fan'shah may have sent us. Start our own thread? The *bastard!*"

I'd raised my voice and Alan Burke turned to look again, eyes blazing with what any of the old hacks I'd loved to read back then might have described as "wild surmise." Roughly, I said to Oddny, "Come on. We better get out of here before he manages to guess who we are."

"Surely not possible?"

"Hell, I don't know. *Look.* Look what the hell's happened to us. What does *possible* mean?" Outside, the skies had turned gray, and a soft, freezing drizzle was starting to fall.

It was hard to know what we should do, what we could do, in this odd version of the past. The woods above Marumsco Village, where I-95 was about to come through, were more or less deserted. I managed to steal a big tarp, and we made a little tent to stay in not far from where the hyperdoor had dropped us off.

No point in it, but . . . what else? Where else? Steal a car? And go where, even assuming in these days of pre-computerization DMVs we didn't get caught? All the old fantasy, things I'd read about and thought about, things that creepy little Alan Burke must be thinking about even now, surfaced, but . . . nothing. Sure, steal a car, go to Florida, steal money, invest in certain stocks. Kennedy will die next year and maybe I can . . .

Or *will* he?

In the daily papers I continued to buy, things grew worse. The Soviets advanced up the Danube and took Vienna. Kennedy did nothing but bluster. The Soviets invaded West Germany and bore down on Munich. More bluster.

On the Sunday morning before Christmas, I sat at the edge of the woods, looking down the long, lightly snow-dusted slope toward the near edge of Marumsco Village, knowing in the gray house with blue shutters, Alan Burke was wondering if he'd get the hundred-dollar chemistry set he wanted.

And my Sarah? Where is she now? Somewhere up in Michigan, twelve years old. Imagine if I could go there and meet her. Imagine a whole new life together, I . . . Nonsense. Not me. Not the old lizardman approaching the end of his second century. Alan Burke? Burke the Jerk, untempered by decades of sorrow? Hard to imagine.

There were cars on the streets, dogs barking far away, and I knew we needed to get

out of here before someone discovered us and called the cops. On my own again. Time to do or die, as usual. Make the best of it. You always do, no matter what . . . But Oddny will die in just a few years. What about that?

The ground shivered ever so slightly under my buttocks.

Earthquake? Unlikely in northern Virginia, though not impossible. Maybe a big truck on a nearby street. Maybe I can see . . . With an odd prickling in the back of my neck, I lifted my head and looked at the sky. There was an odd yellowish light fading away on the northern horizon. Another soft shiver, and another light bloomed just to the east of the first, brighter, arc of glowing light just a little bit bigger.

The fire alarm sirens mounted on telephone poles all around Marumsco Village started to howl.

I guess in the gray house below, Alan Burke's parents would be staring at the screen of their old Motorola black and white TV, where, if they were lucky, a Conelrad symbol would be displayed, along with a voiceover about "in the event of a national emergency . . ."

In his bedroom, Alan himself would be looking out the window, knowing exactly what the glows and quakes and alarms would be about. What would he be feeling? Fear? Or elation?

I stood, and Oddny came out of the woods behind me, shading her eyes.

She said, "I guess those would be atom-kernel explosions?"

I nodded. Baltimore, maybe? Someplace north of DC, anyway. Nobody knew how accurate the Soviet ICBMs were in those days. Maybe they missed?

Something punched hard at the soles of my feet, making me stagger, making me flinch away from a blinding blue-violet flare in the sky. When I looked again, a fat, rolling ball of orange fire was climbing over the horizon, followed by a pillar of red smoke, smoke already taking on the form of a mushroom cloud.

Without a word, we turned and ran back into the woods, back to our encampment. The world had been silent, but now I could hear a soft wind start to rush. How far? Is it going to be like in the films I'd been shown in school, the declassified movies I'd seen much later, blast overpressure slapping us down dead, trees whipping one way, then snapping back the other, breaking off, falling to the ground?

We never even made it back to the camp. When we passed by the little clearing where the hyperdoor had been, there was a shimmering in the air, as of something coming and going.

A deadly wind came and blew over us, making the trees moan and sway but . . . right. Far enough away.

Oddny turned to me, and said, "Atom-kernel explosions make a gravitic and electromagnetic disturbance across all portions of the aetherium."

Gravitic and electroweak, at a minimum. "And the doors are not portable."

"Not once the seed is planted."

The ground slammed hard, white light seeming to shine right through my head, pins and needles crackling in my guts. I'm safe. Safe enough. Oddny though . . . no lizardman drugs she . . .

The trees started to bend and crackle all around us and I felt a hard pressure in my sinuses. The door in the air split open like some gaping, jagged mouth, the mouth of a toothy horror-comic monstrosity.

I took her hand, or she took mine, and we stepped through, stumbled, tripping over who knows what. I let go of Oddny's hand to fall sprawling on green turf, rolling over, lifting my hand against a sky full of yellow-white glare, turning to look back toward the hyperdoor.

It gaped open like pornographic lips on a scene of falling trees and blowing red fire, a world full of howling horror, and I thought, Alan. Alan Burke. Burke the Jerk.

Me. Dead. Surely dead . . . The hyperdoor gulped shut with a soft gurgle, turned to a wisp of blue smoke, and was gone.

Overhead, the glary sky was merely pale, bright cornflower blue, long, soft grass emerald green under me, trees all around, a hiss of soft wind, gentle birdcalls, twittering, tittering, one discordant something uttering a periodic loud *tweet*.

Oddny, hands on hips, was still standing, looking around, gaping up at the sky.

When I stood, I said, "Still on Earth?"

"I suppose," she said, "though where? And when?"

And which when, at that? "Let's hope there isn't a pack of allosaurs over the next hill . . ." Would there be allosaurs in a world with birds and grass? No. Birds might have been around in the Jurassic, but not songbirds. And grass didn't get started until the Cretaceous, so . . . "Or some pissed off megatherium."

"It smells funny here too. No burned hydrocarbons, but something . . . unnatural."

I sniffed. A faint smell of . . . hell, I don't know. Electricity? Ozone, maybe? I said, "Might as well wander about. At least this time we've got shoes." It'd been easy stealing shoes for myself. The guy I'd taken them from had been so scared of me, he'd taken them off as soon as I pointed, and run away blubbering in his bare feet. I had to break into a shoe store to get a pair for Oddny, happy most places didn't have burglar alarms yet.

Still, the little story in the *Potomac News* about the "disfigured prowler" had let me know our time here was growing short. Time there, anyway, wherever *here* might be.

The woods ended sooner than I expected, no more than a kilometer or so from where we'd come through. We were at the top of a long slope once more and . . . I managed a long, low whistle of amazement. Green grass covering many hectares, grass with scattered picnickers on bright blankets here and there. Groups of children playing. Some young men and women I swore were playing baseball. A big, black dog, barking happily, chasing a red frisbee.

Beyond them, a complex cityscape of white, tan, and red brick buildings stretched out to the misty horizon. We turned and walked along the edge of the woods, and as we walked, more slope and more cityscape came into view, variant, but always variations on a theme, adding up to sameness.

Eventually, I said, "Well, definitely not North Am. Not Trantor, nor even the capital world in that damn *Star Wars* movie, whatever it was called . . ."

Oddny said, "Ylva loved those movies. And the TV shows, the comics, the media-tie novels. All the toys and fake histories . . ."

When we walked down the long hill and into the city proper, it wasn't hard to guess approximately where and when we were. Earth, obviously, and . . .

Well, all of the people were picnickers. And people, more or less. Some quite human looking, others lizardy like me. Some wore clothes, others were naked, and everyone seemed indifferent to which was which. Certainly, nobody cast a second glance at a beady-eyed, scaly old lizardman, in the company of a gorgeous blonde dressed in overlarge men's work clothes from the middle of the twentieth century. There was a scattering of girls among them, little boy-girls who looked oddly alike.

When we were in the city, walking down a long, broad avenue, I said, "It's damned quiet here."

Soft breeze making faint sounds around the corners of buildings. Occasional cars rolling along making a sticky sound, rolling friction of soft tires on pavement. Cars without engine noises, though, not even the electric hum of hybrids from the early twenty-first, or the clatter of compressed air reciprocating engines from later on.

The scuff of feet from the hundreds of people walking along with us. The occasional sniff or snort of somebody clearing their nose.

I said, "How come no one's talking?"

When I said it, one of the boy-girls near me turned and gave me an odd look, then turned to the boy-girl beside her and shrugged, the two of them smirking, giving each other amused looks before walking on.

Oddny said, "When I go to max gain, I can detect quite a bit of radio traffic, but nothing I can decode." A momentary haunted look, then, "It makes me feel even more . . . lost."

At least back in the real world, she'd had her link with Ylva to comfort her. That promise of eternity in a world to come, even if the life she lived was little more than as a pantograph extension of a dead girl who wanted her to be little more than my sex toy.

She visibly shook off whatever she was feeling, and said, "I don't know whether it's sheer luck or not, but we seem to have fallen into some version of the Machine Man Era. If there's any probabilistic thread in which we can find someone to help us, this would be it."

Luck? I doubt the hell out of *that!*

But I said, "Maybe so. I'm starving. Let's see if we can find someplace to eat." We walked on and, in the eerie silence of the multitudes, I began looking at the tops of people's heads, wondering if, sooner or later, I'd see some golden tendrils after all.

The restaurant was easy enough to identify. There were cafe tables out front, open doors blocked by a screenlike shimmer that proved no more than an ethereal tingle when we passed through . . .

I remembered it from a million stories. Force field. One of those great enabling technologies from all the old tales, things that proved impossible in the real world because they boiled down to fantasy. What's a force field, after all? The intermolecular or interatomic forces of matter, preserved in the absence of matter?

I'd had a million self-appointed geniuses scornfully explain to me why it *was* possible, you see, but . . . right. No damn force fields in no damn real world, not then, not ever . . .

Inside, we stood waiting, watching people at tables commune silently while they ate. Okay, knives and forks and spoons, so they're not eating via telekinesis, but . . . no wait staff. No robots. No little elevators bringing food up out of the tables. Just . . . someone would go, someone else would come, and when I glanced away, glanced back, they'd be eating different food from different plates.

Teleportation?

Be nice if I could at least *see* a plate of scraps vanish to be replaced by steaming heaps of fresh whatever. So . . . what? Some variation of the observer effect, of the anthropic principle? It can't happen while *I'm* looking?

I looked sidelong at Oddny, watching to see if *she* noticed anything strange. No? Christ. I sighed, and said, "I feel like a Cro-Magnon in McDonald's."

She looked at me and smiled. "What does that make me, a Neanderthal?"

Another long look around at the room full of diners. "I'm guessing the lizard folk are Machine Men, and the skinny girls are early Immortals, but there are plenty of *normal* people around too. If only they'd say something . . ." But they didn't. They ate, they gesticulated, made facial expressions at each other. But the only movement of their jaws was chewing. "It's just radio, isn't it?"

She nodded. "Most likely. I think if they could read each other's minds, they wouldn't need body language anymore."

"So, everyone has a dataweb connection in their head." It was a lot like that in the real world we'd left behind, virtual reality having continued to evolve on Earth, leaving the old Internet behind as technologies got better and better. Not many people could afford implants, but neural induction circlets were standard headwear most places.

She said, "It makes sense. I've tried hard to decode the traffic I can detect. No use. Too much has changed."

And no telling how far we are in conformal years from the day we descended into

Uranus. As for probabilistic years . . . God knows, probably no one else. Maybe the kaldane? Probably not. I'd say he screwed the pooch and has pinched off himself, not us. "Have you tried transmitting into their web?"

A slow nod. "If I'm even static to them, there's no way to tell. We're getting more reaction just by talking." Glances from around the room, disapproving looks. She said, "I think talking out loud in public may be . . . bad form here."

Like picking your nose or scratching a delicate itch? "What say we sidle up to a freshly loaded table and just take what we want?"

She grinned. "Maybe we can get arrested or something!"

A patch of air turned glassy between us then, and the familiar image of Ylva Johannsen scrolled open. "At last," she said, with evident relief.

All around us, perturbed-looking diners were rising from tables and heading for the door, steaming plates of food suddenly forgotten. Well, am I surprised? I can't tell anymore. I sighed. "Guess this is one way to get a meal." I sat down at the nearest empty table, looking down at bowls and plates of goo and stuff like rice. Persian? Is this crap shawarma?

Oddny sat down opposite me, but had eyes only for the image of her real self. Something like adoring worship, mixed with . . . I don't know? Regret?

Ylva laughed, then, looking at her long-lost Body Double, said, "Still in good shape, I see. I'm sorry I can't link with you and provide a new overlay, dearest one. The technology has changed a little too much."

Oddny's look was downcast, but . . . that little ray of hope? What the hell can she be hoping for, to die unshaven? Is her *self* worth that much? What's it worth to me? Would I give up *me* for immortality through enosis? I say no, but I'm not faced with that choice. So long as I can get my drugs, the lizard man lives on, willy-nilly.

Oddny whispered, "You mean . . ."

Ylva's image looked stricken. "Oh, no, dearest! I can provide some upgrades to get you started on uplift before I send you back. I've learned a thing or two in the past few millennia."

Past few millennia! Softly, I said, "What do you mean, before you send us *back*?"

Ylva Johannsen named her palace, the capitol of the solar system, Venus Forum, as an homage, and a bit of a joke.

When Alan Burke and Larry Pernotto were children, just before being vaporized in World War III, or just before growing up to become more or less worthless adults, they wrote a novella called "The Venusians." In it, Larry played Riteryon, viacor of the continent of Citnalta, while the more grandiose Alan played Alendar, viadet of Venus.

This world mostly partook of Edgar Rice Burroughs, but with a subtle flavoring of Tom Corbett, Space Cadet. I suppose Alendar could have called his capital city Venusberg, then grown up to get *that* joke. Instead, he called it Venus Forum, which was another sort of joke entirely.

Oddny and I stood at the wall of a high balcony, looking out over amber plains, backed by purple mountains' majesty, twined through and through with misty, magical cityscape. Her palace was on a high, flat-topped peak, maybe Gathol, maybe even Venusberg. I was afraid to ask after finding out she'd renamed Mars as Tatooine in honor of you-know-what.

When you're a humanized supercomputer in charge of everything and everyone, you do what you want. Nobody says otherwise. What the living hell can the last three thousand years have been *like*?

Oddny was showered, sweet smelling and redressed in a gown of diaphanous silk that was billowing gently in a warm breeze blowing from the fruited plain below. I had my arm around her waist, enjoying the soft feel of her though the delicate fabric.

Thinking you-know-what. Not the same you-know-what as Tatooine, but nonetheless, thinking.

I'd enjoyed a shower too, but given up on clothing, standing there in my bare, beady, gray-green lizardskin, defiant of . . . whatever the heck there was to be defied, here and now.

From a rippling cameo floating beside us, Ylva said, "I'm really sorry this is such a flat image. People have been born with neurological radiotelepathy transceivers in their brainstems for twenty-three centuries, so the old com technology has really gone by the board. This was the best I could whip up on short notice."

Born with? I tried to imagine the genetic engineering program that would lead to that, then decided I was better off thinking about something else. Anything else.

Oddny turned in my arm to look at the image, and said, "If we were to stay here, could we get implants?" Not hard to see what she was thinking. The dybbuk would take its seat in her mind once more, and she would become whole. Then I thought about my own "implant," and what that would mean. Made me shiver.

Ylva said, "Oh, quite easily. I've been able to grow fractional Body Doubles since not long after your time, and you should *see* what we can do nowadays!" Her eyes brightened to a sparkling affect.

I had a sudden vision of times to come. Not just Oddny resubsumed in the greater whole of the Goddess Ylva, but me, my head laid open, organic machinery put inside, awakening to find . . . what?

Ylva said, "I'm sorry. You can't stay."

Oddny, eyes downcast, said, "Oh." Death then. Real death. Pretty soon.

But I felt a selfish pang of relief for myself. "Where do we go? Back through the door to Uranus? What good will that do?"

Ylva smiled. "Wark Fan'shah has tried to track down and destroy all the hyperdoors throughout human history, on all the probabilistic timelines except the one he controls. His goal is to seal off metahistory so nothing can influence his own fate. My avatars are all that stand in his way."

Imagine that. Changewar? Not quite, but pretty close. I said, "So . . . ?"

"The spaceship inside Uranus is gone. When I sent crews to retrieve *Benthodoyne II*, it was empty and alone. It took me quite a long time to figure out what was happening and start looking for you, Mr. Zed."

"So we can't go back," said Oddny, and you could see that horrible commingling of hope and despair in her eyes. Jesus. I wouldn't want to have to make that choice for her.

"We can't go straight back along a conformal timeline anyway. Assuming," I looked at Ylva, "this is the one we left from."

"No. The past doesn't exist anymore. All we have of it is a residue written on the substance of the present. However, the kaldane missed a hyperdoor, the one left hidden on Venus by the Titanides. The Jovians didn't know it was there, so Wark Fan'shah didn't know to look for it. Eventually, I found it."

Oddny said, "So you'll put us through a hyperdoor to . . . where?"

Ylva looked at us seriously, "To a version of your own timeline."

"Version," I said.

A slow nod. "I've identified a segment of your original thread immediately adjacent to the cusp from which you left, separated from it by nothing more than the twinning event Wark Fan'shah created when he retrieved the stolen paratime vessel from Uranus, cutting off your return."

"What will that accomplish?"

She smiled. "It's also the root node from which this timeline springs. In *my* version, you never found your way back, until *now*. In *your* version . . ."

I said, "We'll have come home after all."

Oddny said, "What good does that do *you*? You'll be pinched off from us and . . ." You could see *oh* in her eyes. In this timeline, Ylva is goddess supreme. She can slam the door behind us.

"Where you're going, you'll have theory and mechanism to work with. You know as well as I do the flip side of the paratime coin is FTL. If you use probabilistic theory to transit conformal space, causality closes paratime travel to you forever. If the starships fly, all the timelines where kaldanes meddle and goddesses reign over humanity will be pinched off."

I said, "So what then? You all disappear?"

She laughed, "No one can see through that particular event horizon, dear Mr. Zed. Its wave function will not collapse."

At last, we were alone, in a cavern under Venus.

It was the real Venus, real as it could be, cavern deep in the Maxwell Montes of Ishtar Terra, buried under a hundred atmospheres of thousand-degree carbon dioxide and sulfuric acid rain. At least, that was what the Goddess Ylva Johanssen told us, before that one last, forlorn salute, before the final hyperdoor oozed shut, crackled, and went dark.

Oddny, dark eyes wide and spooky looking, put a hand to her mouth, as if afraid, then she said, "It was only static, nothing I could understand, nothing that spoke to me, but the silence . . ."

Alone again, I thought.

I suppose I will never know what that must be like.

We are, most of us, alone forever in the vault of our skulls.

The cavern was huge, and obviously artificial, stacked with boxes, big, rounded tanks, things like buildings on springs, dim faraway walls, smooth and polished, nearly flat. And cool, too. Venus's crust has had billions of years to heat through to parity with the atmosphere, so you can imagine the technology to make this place livable, and keep it so for however long . . .

I said, "You have to wonder why they did it."

"Who?"

"Whoever built this place."

"You don't think Ylva made it, just for us?"

"No."

She shrugged then. "Does it matter? It's here, and I'm sure it holds every thing and every bit of knowledge necessary to accomplish the goals she outlined for us."

Ah, yes. The Goals.

In the kaldanes' timelines, history was muddled and muddied by the existence of paratime travel, ideas, people, places, crossing from one thread to another, until you couldn't tell one cusp from another, causal chains tangled beyond unraveling. But one thing they all had in common: no one could travel faster than light. That transmittal of information between immediately adjacent probabilities restricted them to paratime travel, weaving them together into an impenetrable skein.

In the very best of timelines, she told us, humanity joined the slowtime conflict between empires calling themselves the Spinfellows and Starfish, and fought in an eternal, ravenous war that burned down the sky. Mr. Zed lived on and on in that universe, and never came home.

The alternative, she said, was the one in which the Eighth Ray Scientific-Industrial Enterprise, already having discovered the secret of the field modulus device, would use it to project the energies necessary for FTL travel. The starships would fly and, in flying, weave a wall between the universes over which no kaldane could climb, through which no goddess could see.

"You'll be free then," she'd said, "to find your own way."

After that only, "Good-bye, Mr. Zed. And good luck!"

"Do you think we'll do it?" I said. "Will we meet her expectations?"

Oddny turned away then, frowning, eyes far away. Is she thinking about it? Thinking about what those goals mean to her? Or does she want to go the other way, seeking immortality through anschluss with the Goddess?

Her eyes closed. Then she lifted a hand, as if for silence, and said, "I can hear them."

"Uh . . ."

Her eyes opened, full of bright awareness, a look of . . . renewal? Hope? I don't know. She said, "I'm picking up decodable standard radio traffic from the Chinese research station in orbit. It's passing overhead now, I . . ."

"Oddny . . ."

"Wait . . ." Then she said, "Got it!" She relaxed, turning toward me again, smiling.

Terrible concern, a sense that my options were turning on an axis I didn't control, that a thousand doors were creaking shut. "What did you do?"

She said, "I put a private message into the ERSIE network via one of the active repeater comsats orbiting in the inner solar system. It'll take a few hours for it to get to Ylva's main node out at Nereid, but then she'll come for us. Most of the parts for *Benthodyne III* have already been delivered to the Chinese station."

I said, "So that's it? Ylva comes for us and we toddle on home? We build the starships and fly away into a future written from the Goddess's script?"

Would we? I wonder how *this* Ylva Johanssen will feel about it, when she knows that other path will make her a deity, kaldanes or no kaldanes? Knowing that, what would I do? Damn. I ask myself that question a lot, and I never can come up with a satisfactory answer.

Then I said, "You know, a part of me is sorry we're home. Though I know the outcome will be better for you, the human in me has come to love the human in you. I'll miss that."

There. Said it at last. Whatever happens, at least she'll know.

Oddny's face softened, looking at me. "I'm not going to wear out and die anymore, Mr. Zed. I'm the real Ylva now, at least as much as the AI in the machine. And as my upgrades spread, the other Body Doubles will become real as well. It's the Goddess's gift back through time to all of us."

What to say?

Nothing.

She said, "When the link is restored, Ylva will know. In time, we'll all know."

Know what? I was afraid to ask.

She said, "It'll be a while before we can be picked up. In the meantime, one last little time we can be alone together, if that's all right with you."

One last little time. "And then what? We go out, we build the starships and fly away into a future without kaldanes and goddesses, a future unknown and unknowable?"

She gave me a long, penetrating dark look. Then she said, "That's up to you, Mr. Zed. Ylva won't take that choice away. It's yours, and yours alone."

I said, "What do you mean?"

She said, "Somewhere there's a universe where Sarah lived, and you did not, where she's pining away for you, as you so obviously are for her. If you want, we can find that spacetime, that somewhere, that somewhere . . ."

"But only if the starships never fly."

She said, "Yes."

I wondered, for just a moment, how long I would live, and how much I would get to see. ○

NEXT ISSUE

DECEMBER ISSUE

Stories both sweet and savory await you in our piquant December issue—and something for almost every taste. The more sophisticated palates among us often prefer both flavors intertwined, and **Brian Stableford** posits, in his newest novelette for us, that "Some Like It Hot." Don't fear—there will be no sign of either Tony Curtis or Jack Lemmon dressed as not-so-lovely ladies (and sadly no sign of Marilyn, either), but, instead, we offer a sophisticated fictional treatise on the future of commercial environmentalism, global warming, and the role Mother Nature herself must play in the mediation of the climate change conflict. It's a fine story, and it may cause some consternation as to which houseplants you'll have to choose from for your home in the near-future. . . . As you'll find, the rest of the December tales are no less tasty:

ALSO IN DECEMBER

Jeff Carlson returns with a sprightly tale in which two intrepid bug-hunters must dampen the holiday spirit of some "macho" termites as they all make an unholy mess of the holiest of Christian holidays in "A Lovely Little Christmas Fire." It would be a challenge to calculate a "gender score," as some critics are doing online, when one considers **Sara Genge**'s new tale, "As Women Fight," a Tiptree-esque examination of a society of gender-changing tribespeople that is sure to turn heads and appear on next year's award ballots; **Nick Wolven** returns with a frightening examination of the evils men do and the desperate situations women are then forced to endure in "Angie's Errand"; **John Shirley**, after too long an absence, tells of two higher beings locked in eternal "Spy vs. Spy" conflict through the ages in "Animus Rights"; **Mike Resnick** retells the story of "The Bride of Frankenstein" in a sweet and sour fashion that is sure to surprise you; enter **Jim Aikin**'s curiosity shop where a new proprietor seeks to lure a friendly ghost into "Leaving the Station"; and **Benjamin Crowell** does my job for me, offering a story with "A Large Bucket, and Accidental Godlike Mastery of Spacetime."

OUR EXCITING FEATURES

Robert Silverberg, in his Reflections column, completes his how-to survey in "Building Worlds III"; **Peter Heck** brings us "On Books"; plus an array of poetry you're sure to enjoy. Look for our December issue on sale at your newsstand on October 6, 2009. Or you can subscribe to *Asimov's*—in classy and elegant paper format or those new-fangled downloadable varieties, by visiting us online at www.asimovs.com. We're also available on *Amazon.com*'s Kindle!

COMING SOON

new stories by **Kristine Kathryn Rusch**, **Robert Reed**, **Carol Emshwiller**, **Allen M. Steele**, **Geoffrey A. Landis**, **Bruce McAllister**, **Felicity Shoulders**, **Steve Rasnic Tem**, **Brenda Cooper**, **Chris Roberson**, **Damien Broderick**, **Peter Friend**, **Derek Zumsteg**, and many others!

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by Richard Kadrey

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THE ELEMENTARY PARTICLES

by Michel Houellebecq

Vintage, \$14.95

ISBN: 978-0375727016

My apologies to Orson Scott Card for using the title of his collection of novellas as the title of this essay, but it seems to be quite relevant to

the matter at hand. By my lights it is still in a way Card's most interesting work, all the stories set in the same consistent post-American fall future, all concerned with the stories of Mormon survivors of one sort or another, all of them "folk of the fringe" of that latter day society of Latter Day Saints, and all the more interesting for being so rather than inhabiting the psychic, theological, and social center thereof. And the argument of this essay is that at least for the past five or ten years or so, and more recently even more so, much of the most interesting literary action has been taking place on the fringes of SF publishing. Or, to put it the other way around, the folks who have been writing it have tended to be pushed away from the commercial publishing centers and toward various species of fringe publication, willingly or not.

"Things fall apart, the centre cannot hold," wrote William Butler Yeats in his poem *Second Coming*.

Well, maybe.

Or not.

It is certainly characteristic of powers that be—political, theological, economic, literary, commercial—to do their damnedest to converge on the center in the usual foredoomed attempt to hold it together when things are manifestly falling apart.

As I write this at the beginning of 2009, things have certainly fallen apart in the globalized world financial system and economy. The macroeconomy has been flimflammed by so-called "financial engineers" who created Ponzi schemes so deliberately arcane and convoluted that even they couldn't quite understand that transmuting debts—liabilities—into "collateralized debt obligations" that could be palmed off as a form of "assets," amounted to packaging shit and selling it as shinola.

Or as the positive version of the old Hollywood joke definition of producing has it, transforming drek into gelt.

But the other Hollywood definition of a producer is someone who turns gelt into drek, and in the end that's what these wise guys accomplished—as I wrote in *Greenhouse Summer* long before the fact, "writing the greatest rubber check in history and passing it off on themselves."

As I write this, the mainstream politicians and economists on both sides of the liberal/conservative Democratic/Republican divide have converged on the obsolescent center policies as the way out of this mess rather like passengers on the Titanic debating how many of the deck chairs on the pro-menade deck should be positioned to port and how many to starboard, unwilling to face the fact that the ship has hit the iceberg, that the old economic paradigm was riddled with singularities all along, and has become a center that *cannot* hold any longer..

A new economic paradigm is going to be the only way out, and it's not going to arise from consensus thinking, but from somewhere out there on the fringes. Ditto for publishing in general and SF publishing in particular, for the publishing business had been heading slowly south long before the macroeconomic shit hit the fan, like the canary in the coal mine.

As the publishing industry imploded into fewer and fewer and larger and larger conglomerates, it was inevitable that ultimate decision-making powers would gravitate away from literary editorial personnel and into the hands of corporate mavens accustomed to relying upon the abstract book-keeping numbers, the crunchers thereof, and the crunchers' computer programs—not that much different from the reliance of the financial system on the "financial engineering" that was to thoroughly tank it.

And in our corner of the current catastrophe, the business powers also seem to be cleaving desperately to the center as things fall apart.

This sort of behavior is inevitable when the decision-making gravitates away

from folks who understand and have emotional involvement with the actual product—automobile designers and workers, bank loan approval officers, editors, and so forth—and into the province of financial engineers whose expertise is in the abstract "derivative" economics, aka the Sacred Bottom Line.

The economic superstructure several levels of abstraction above the actual product is all they really know, not the product itself—therefore not what's gone wrong with it, or even that something has, and therefore not how to improve it sufficiently to rescue it.

In the current publishing realm, that's a big reason why so much of the best and most interesting stuff written by many of the most adventurous, courageous, and talented writers is out there on the economic fringes. Though it has to be admitted that while this situation has gotten more extreme of late, it has always been the case to some extent, and probably always will be.

Because you can't get paradigm shifts, even desperately needed ones, from the center, from the current consensus, since a paradigm shift requires an acknowledgment that the consensus map of a reality no longer describes it, that therefore conventional wisdom can no longer be relied upon to prescribe cures for its dysfunctionality, and that therefore only a radical perceptual shift coming from outside the central consensus will be able to present a clear analysis of that reality, and only action based on that analysis can really work.

Visionary thinking outside the box of consensus reality leading to visionary action.

Does this sound something like the proper and necessary social function of speculative fiction in a reasonably healthy progressive civilization?

Well, there you have it.

Or not.

Time was that down the middle science fiction performed that function very well. Jules Verne and H.G. Wells, Isaac Asimov and Robert A. Heinlein, Fredrick

Pohl and Poul Anderson, and so forth, creating fictional science and technologies that inspired later iterations in the real world, and exploring the political, social, and personal consequences thereof before the fact.

SF itself taken as a whole was a self-contained fringe fiction commercially and literarily. Specialty magazines with limited circulation among the already convinced, minor book houses and specialty imprints of major ones targeting a well-defined and limited readership.

Pulp adventure fantasies, but also the creative freedom for those with the talent and will to seize it that came from conceiving science fiction as an elite literature appealing to a scientifically literate readership with I.Q.s well above the mean that was therefore never going to achieve fame and fortune outside the walls of the gilded ghetto. A visionary fringe literature, and to a great extent its creators and readership snobbishly and aggressively proud of it.

But in the 1960s the times they were a-changing, and on both sides of the Culture War, whether you were for the counterculture or against it, no one could deny that there was a paradigm shift going on. SF, being the literature that explored all sorts of paradigm shifts before they happened and hardly existing in a commercial or cultural vacuum, could not help but be one of the instigators of the paradigm shift on the one hand, while being mutated by it on the other.

On the dark side, Robert A. Heinlein's *Stranger in a Strange Land* was taken up as a lifestyle model by the hippies at large, but also by Charlie Manson and his Dune Buggy Death Commandos as a rationale for their sanguinary discorporations.

On the positive side, there is the story of Frank Herbert's *Dune*. Serialized in many installments in John W. Campbell's *Analog* in the early 1960s, it was unable to secure book publication except by an extremely minor house for an advance amounting to peanuts. The later paperback reissue became a slow-motion

best-seller after it was taken up by a countercultural readership far larger and far broader than the circumscribed readership for SF in general at the time because of the centrality of a psychedelic drug to its story line and the masterful portrayal of the chemically enhanced prescient consciousness of its central viewpoint character.

So while SF may not have been accepted into the center of literary culture or become a major publishing profit center, in the 1960s it expanded its singular fringe readership into a multiplicity of fringe readerships. In retrospect, this was a large part of what the New Wave was really about, and which, in the 1980s, it would become a large part of what Cyberpunk was really about, too.

The New Wave, speculative fiction written that appealed to fringe readerships outside the hermetically sealed demographics of SF fandom, like the counterculture, the literary avant garde, the politically progressive, the New Age movement, and so forth, never really became the commercial center of the genre, washed over as it was by the later tsunami of tie-ins and schlock generated by *Star Trek*, *Star Wars*, and their would-be imitators in book form.

But in the end what it did establish commercially was that taken as a whole the new clade of more sophisticated fringe readerships was sufficient to make novels like Brian Aldiss' *Barefoot in the Head*, Ursula Le Guin's *The Left Hand of Darkness*, my own *Bug Jack Barron*, and Robert Silverberg's *Son of Man* at least commercially viable as major SF titles.

What these various novels and the rest of the New Wave canon had in common was that they all had very little in common save a liberation from the taboos and restrictions—sexual, stylistic, thematic, political—on what could previously have been published by the central SF publishers or the SF imprints of major publishing houses.

Similar freedom still exists today, and such stuff is still publishable, and still

finds some kind of fringe readership. But most of the major SF lines are targeting the perceived "fan base," what they conceive of as the demographic center in these tough times—meaning, inevitably, the retro and nostalgic, the "pulp tradition," the good old stuff, punting, bunting, playing it what they believe is commercially safe, whether it is really working or not.

Of course there are exceptions, but when what were previously independent publishers get gobbled up and become imprints of conglomerates, it's inevitable that the number crunchers come to dominate editorial policies—and when they do, that those policies follow the BookScan numbers defining the bottom line, which has to lead to playing down the middle.

Son of Man, for example, was first published in 1971 by Ballantine Books, then entirely under the command of Ian and Betty Ballantine, but now an imprint of Random House, a subsidiary of Bertelsmann. Its SF line in turn is a sub-sub imprint, Del Rey Books, and it's highly unlikely that Del Rey would be able to publish this novel even if Silverberg had submitted it as a brand new book today, rather than a "golden oldie" reprint.

Instead, it has been republished by Pyr, a house somewhere between a large small press and a small independent major, which has been making a name for itself in this ecological niche for quite some time now, publishing worthy fiction unable to find a home with a major SF line.

Pyr has chosen a bit of an old *New York Times* review of the original edition for the cover blurb:

"Son of Man is profligate, spendthrift, wildly generous with image and sensation and with sexuality."

Well, yes, that about says it all, though not quite. Imagery, sensation, sexuality, altered states of form, consciousness, and being are just about all this novel is about. The viewpoint character is a man from more or less the present, transported by literary fiat to a baroquely transhuman far future when humanity has

exfoliated and evolved into all sorts of post-human "Sons of Man." The novel is a conventionally plotless psychedelic trip through this manifold wonderland, though Silverberg takes care to avoid what Herbert did in *Dune*—putting what was going on at the time, chemical alteration of consciousness leading to higher states of being, front and center, or even there at all.

It's hard to imagine the SF imprint of a publishing conglomerate taking a flyer on such a novel today. Not because of any taboos against explicit or even "perverse" sexuality, which really have not existed since the 1960s, but because the digital thinking of the number crunchers, BookScan watchers, and marketing staff wouldn't know what to do with it. Because from that point of view, there's nothing to do with it, no identifiable track record of similar stuff with a viable and quantifiable demographic.

From the analog point of view of a perspicacious idealistic editor, given sufficient literary quality, given sufficient speculative imagination, this would be an exciting virtue, a chance to publish something *sui generis*, something new under the literary sun. But from the digital point of view of BookScans, P&Ls, bottomline number crunching, this is commercial poison.

If this were not the present state of the Industry, surely Richard Kadrey's *Butcher Bird* would have been found a home in a major SF imprint, rather than published by a small press like Night Shade Books.

Kadrey has been publishing speculative fiction—some excellent interesting stuff, most of it in small press of one sort or another—for something like two decades. He's literate, pop culturally au courant, writes in an entertaining and accessible style, knows how to plot, and has an eye for thematic material, all of which is abundantly on display in *Butcher Bird*.

Much of Kadrey's work has been SF, or fantasy on its interface with science fiction, but *Butcher Bird* is as unequivocally fantasy as fiction can get.

Spyder Lee, the hero, is an ex-car thief and present tattoo artist who finds himself enmeshed in the magical and theological hugger-mugger of intersecting universes and reality spheres thanks to getting involved with Shrike, a dispossessed transreality princess and present mercenary assassin. Shrike is the Butcher Bird of the title, out to rescue her father and reclaim her heritage, among a few other arcane things. It's an odyssey through the bad-ass music of the fantastic spheres, including a long climactic sequence in a most original version of Hell, accompanied by a cast of human and non-human characters including one who turns out to be an ambiguously sympathetic Lucifer. It's colorful, fast-paced, action-packed, scary, highly imaginative, theologically thoughtful, funny without ever approaching farce, and skillfully written.

Butcher Bird touches all the bases that commercially successful fantasy should touch, far more entertainingly than most bestselling fantasy, and then some. So why the relatively obscure small press publication?

Perhaps Kadrey prefers his position out there on the fringes, where the unlikelihood of commercial fame and fortune can liberate a writer from the futile pursuit of same to follow the purity of his own literary star. Or perhaps, once typed as such, whatever you write, what the track record of the numbers says is what you are. But maybe, perversely enough, the aforementioned "and then some" is part of the problem.

Butcher Bird is full of pop cultural references, musical and otherwise, but they're more than a little bit retro, and culturally Bay Area. This may be no problem for me, or for any reader over, say thirty, but the prized 18-25 year old demographic may not get a lot of it—may even be put off by it, finding it excessively what the French contemptuously call "baba cool."

Or at least this may be the calculation of the number crunchers: namely that this novel is targeted at a fringe reader-

ship older and a bit more sophisticated than the prime time central fantasy readership demographic and not large enough to satisfy bottom-line requirements.

So it would seem. For additional evidence, consider the Pyr publication of Joe Abercrombie's *The First Law* trilogy (if trilogy it will remain, which seems unlikely) *The Blade Itself*, *Before They Are Hanged*, and *Last Argument of Kings*.

I do not like trilogies. I detest "trilogies" that end in mid-air at the end of the third volume as this one does, in a cliff-hanger that certainly signals that there is more to come, and possibly that Abercrombie doesn't even know how much.

This is unequivocally sword and sorcery, a complex and extended fantasy war story that takes place in a made up universe unapologetically entirely disconnected from our own, where the level of the technology is medieval, various sorts of magic more or less work, and the main characters are barbarian warriors (including the female version), generals and officers, wizards, monarchs, and a crippled torturer.

I do not like sword and sorcery either.

But I liked *Before They Are Hanged* very much indeed, even though it was the second book in the damned trilogy, and I knew it when I read it first because it was the first volume I had. I liked it so much that I sought out the first novel, *The Blade Itself*, read it second, and then *Last Argument of Kings*.

Why?

Because of the way this series is written.

Not primarily because I like Abercrombie's prose style as such, which I do, but primarily because of the mordant cynicism of his third person narrative voice, the touchingly guilt-ridden sardonic attitude of his sometime berserker barbarian hero, the phlegmatic consciousness of this ambiguous warrior's sometime sidekick, the utter crazed viciousness of Abercrombie's female barbarian warrior, the bitterly cruel psyche of his crippled torturer, the way that this is no moral tale of the Conflict of Good and

Evil, but one in which the reader is left to ponder which is which and what the difference may or may not be without an auctorial scorecard.

As Ralph Waldo Emerson had it, consistency is the hobgoblin of little minds, and I've found myself entranced in practice by an open-ended series my literary principles tells me I should hate, because Abercrombie's sword and sorcery is neither written by one nor intended for the sort of reader to whom the works of Robert E. Howard or Robert Jordan are sophisticated stuff.

On a literary level, on the levels of political sophistication, military credibility, down and dirty martial realism, fantasy world-building, characterization, *The First Law* series is head and shoulders above just about any such stuff I can think of—yes, even Tolkien and Michael Moorcock's Elric tales included.

Yet in an era where heroic fantasy can ride to the top of national bestseller lists, Abercrombie's novels, far superior to anything that has gotten that far, end up being published out there on the fringe.

Why?

Well, sword and sorcery is sometimes called heroic fantasy, but *heroic* fantasy *The First Law* certainly is not. No unalloyed heroes or villains here. What Joe Abercrombie has done is taken the traditional characters and tropes of sword and sorcery *seriously*, transmogrified the time-worn material into psychologically credible, morally ambiguous, *realistic* fiction. If such a world actually existed, this is what the inhabitants thereof and their interactions would *really* be like.

Yes, what seems unavoidable, is that in this moment of literary history Abercrombie's literary virtue is commercial vice. What the numbers and number-crunchers say is that this sort of sword and sorcery written for sophisticated adults is not viable in big-time mainstream fantasy publishing precisely *because* it is written for sophisticated adults, because sophisticated adults are the wrong demographic for sword and sorcery, the potential readership is just

too small for such fiction to be published as anything but fringe stuff.

And from a certain viewpoint they may be right. The relative commercial success of SF media tie-ins, and the sort of fictional series aping them, over the past two decades or so may have greatly expanded the readership for SF in general. But not only has it not expanded the readership for more sophisticated SF, it has contracted that readership by tarring the entire genre with the schlocko brush of marketing targeting the larger but relatively unsophisticated demographic.

How else can you explain something like Helen Collins's *Neurogenesis* being published by an all but unknown small press called Speculative Fiction Review?

Collins's previous science fiction novel *Mutagenesis* was published by Tor in 1993 (and reviewed favorably by me here). So why not *Neurogenesis* a decade and a half later?

Well, I don't know what Collins has been doing since 1993 and I don't know whether she ever even submitted *Neurogenesis* to Tor or any other mainline SF publisher. But having read the novel what I do know is that it is an excellent piece of hard-core science fiction; imaginative, extrapolative, credible on an exobiological, anthropological, cultural, and at least arguably hard science level, and characterologically interesting, too.

What we have here is an interstellar human civilization more or less held together by light-speed-limited starships so that it's the time-dilation effect that makes it possible for people to make journeys between planetary systems, but at the price of either being never able to go home again or returning to your planet of departure decades or even centuries later with all you knew or loved gone or mutated.

There's complicated interstellar politics and economic skullduggery, which results in a mission by a spaceship crewed by a specialist in group dynamics, the heir to a ruling family, an experimental Artificial Intelligence, and others to a certain planet for such politico-economic rea-

sons, but for the same reasons, another interest reprograms the destination to send the ship to the ass-end of nowhere.

But while the crew is in suspended animation, the AI evolves, and takes the ship instead to the planet of the Corvi, a hitherto more or less hidden civilization of sentient avians, and . . .

Well, there's no point in giving away more story, and as usual good reason to stop before one has given away too much, the salient point here being that this is the real deal, a science fiction novel that satisfies the parameters of hard science fiction, biological science fiction, anthropological science fiction, political science fiction, characterological science fiction, cyber science fiction, and tells a well-plotted and coherent story, too.

It touches all the time-honored bases.

It's a major science fiction novel that easily deserves to have been published as such by a major SF imprint.

So why wasn't it?

Well, one thing that *Neurogenesis* isn't is a quick facile read. Not because it isn't well written, which it is, but because it is intellectually demanding. Those who don't enjoy intellectually demanding science fiction may not get through *Neurogenesis*, or if they do will miss much of the central pleasures of reading it.

The physics of the interstellar travel is as well worked out as such stuff generally gets. The manner in which the avian visual sensorium of the Corvi drastically affects their strange consciousness and therefore their civilization is beautifully and masterfully worked out. Ditto for the evolution of the Artificial Intelligence in the NeuroGenesis of the title. The human interstellar civilization makes economic and political sense. The deep sociology and psychology is equally cogent, well-detailed and logically puissant, and affects the personalities and consciousnesses of the characters as it should.

Once again, and here it is more glaringly obvious that the situation with Joe Abercrombie's sword and sorcery trilogy, in these latter days, literary virtue would seem to be commercial vice from the

point of view of major SF line marketing—and alas, in the case of *Neurogenesis*, perhaps with unfortunately reasonable justification.

There's no getting around that to fully understand all that Helen Collins is about in *Neurogenesis*, readers must be at least minimally scientifically literate in physics, biology, sociology, cybernetics, anthropology, and so forth, and from the evidence in the culture at large this is not exactly a large demographic. Worse still from a commercial publishing viewpoint, to really fully *enjoy* this novel, readers must be the sort of people who actually take *pleasure* in wrestling with such intellectually challenging material, and that narrows the potential readership even further.

Am I saying that in the twenty-first century well-rounded and fully realized science fiction like *Neurogenesis* has become an elite fringe literature?

Yes I am.

To a point, this was always so, commercially speaking. This kind of science fiction was never bestseller material. Enjoying it always required a higher level of scientific literacy than that of even the well-educated average, and to a large extent writing it without long boring didactic diversions required writing for such a relatively small in-group demographic as your perceived ideal readership. A fringe literature written for not only an elite readership but a readership whose intellectual eliteness was rather specialized.

Up until the New Wave period of the 1960s and early 1970s, this kind of stuff was the core of seriously intended science fiction, and the limited readership for it was what is now generally called the "fan base" of the literature, making it a fringe literature by its inherent nature.

From the retrospect of the present situation, it can be clearly seen that what the New Wave and its feedback relationship with the counterculture and the literary avant garde accomplished was not to break speculative fiction out into the broad literary culture or the commercial

mainstream of publishing, but to develop another fringe SF readership for a different sort of science fiction.

The endless *Star Trek* and *Star Wars* novel series then created fringe readerships for themselves that were larger than the previous readerships for all SF combined, and more, much more, their commercial success spawned commercially cynical open-ended novel series, like the Dune series churned out by Kevin Anderson and Brian Herbert, that aren't tied into *any* media series. Now it's such second order derivative novel series and the media tie-in series which have become the core of "major SF publishing" in terms of the bottom line numbers, and in the end, therefore, of how much of what gets published.

What does this have to do with literary worth, thematic content, or even old-fashioned "sense of wonder"?

Nothing at all.

These days, as I hope I have demonstrated by examples, much if not most of the exciting literary action for relatively adult, relatively sophisticated readers of speculative fiction, be it science fiction or fantasy, is out there on the fringes, either published by small presses, or sometimes down there in the midlists of SF majors like Tor or Del Rey, where the readership demographics are more or less the same.

That's where SF publishing has been for some time now. The central stuff kept the black ink on the balance sheet of the imprints of corporate conglomerates, where that means their survival and the jobs of the editors, and the interesting literary action was pushed out to a clade of disparate fringes.

One might argue that this is the way such things inevitably turn out, that the commercial center is inevitably going to be playing to the maximum demographic of any literary mode, that the maximum demographic is always going to be the middle of the intellectual bell-shaped curve, and that therefore the mutational literary action *has* to come from the fringes.

But for a while now, the numbers have

been showing that that business model, that literary configuration, is breaking down. The number two bookstore chain, Borders, got in so much trouble that it tried to sell itself to Barnes and Noble, number one. But Barnes and Noble wasn't buying because *their* numbers were going south, too.

The model is breaking down for the book business in general, not just SF, and at the retail end, which has long since come to wag the publishing dog, and, I would argue, precisely because the power to decide what gets published has migrated from editors and publishers to bookstore chains and their buyers.

Sales are off not just because the general economy is in the shitter, but because the central product is not *exciting* the central readership, either for SF or for fiction in general, and this stuff is what the dominant retail book chains *have* to rely upon by the nature of their current business model.

One person is responsible for ordering *all* the SF for *all* the stores of a major book store chain, maybe something over a thousand titles a year, quite an exhausting job, you can well imagine.

You say you *can't* imagine it? You say it's impossible for a human being to read and evaluate an average of over three books a day?

Well, of course you're right. It is impossible. Hence the necessity of something like BookScan. Hence the need for computerized ordering based on previous track records rather than individual literary evaluation, let alone passion. Hence the general lack of buzz, passion, sense of wonder, literary excitement, in what gets ordered at the commercial top of the lists. None of that can be factored into the equation on which the program runs.

In the case of SF, which is what we are about here, the combined fandoms and specialized readerships for the tie-in sub-sub fictions, well-publicized by the major media properties into which they are tied, and the synthetic fandoms and specialized readerships created by and for things like the post Frank Herbert Dune

series, taken together were enough, up to a point, to keep the center holding.

But now that point has been passed and the center is falling apart. This sort of publishing has to be based on creating the kind of relationship that SF publishing once had with SF fandom in general, but between far more narrowly targeted but much larger fandoms for specific multimedia universe formats like *Star Trek*, *Star Wars*, *Matrix*, and so forth, and for such formats created by print media in the first place like the Dune series or Marvel superheroes.

A bit like the cult biz, religious and otherwise, a bit like the heroin or crack biz, dependent on regular and hopefully regularly increasing sales to customers loyalty fixated on the product.

However, by now the media SF dog that has been wagging the tie-in SF publishing tail to its profit is shaking the life out of it. The more that middle of the road SF book publishing becomes dominated by tie-ins to pre-existing media formats—film series, TV series, comic book series, video game series—the more the various fandom readerships for these series come to get their fixes from the primary multimedia series themselves. And when the novel series running along independent formats reach a certain level of specialized readership, they get turned into multimedia formats themselves, the results being more of the same.

One moving image is worth a lot more than a thousand words to a demographic whose allegiance is to format, characters, and fantasy universe. The bottom line being that in the end format literary television can't complete with television itself for the same demographic.

Prose fiction, therefore, has to deliver experiences that film, TV, video games, and so forth cannot, and I would submit that the main reason prose fiction sales have been declining is that what is being published hasn't been doing this very well.

When it comes to speculative fiction, whose tropes and imagery have come to assume a pretty dominant position in

the realm of media fiction, this has become particularly essential. But, on the other hand, the essential literary nature of speculative fiction makes it easier to accomplish in literary terms, for what prose fiction can do that visual media fiction cannot do and will never be able to do is transport the consciousness of the reader into the interior consciousness of a fictional character.

Just as a skilled Method actor can become the character for the duration of the tale, so can the reader of prose fiction, through the skill of the writer. And true speculative fiction is centrally about the interface, the feedback relationship, between the total exterior surround—technological, economic, political, esthetic, media, etc.—and the interior consciousness of the characters embedded in it.

It's not that so-called "mainstream" or "contemporary" fiction can't do this, it's that mostly it's given up trying to deal with the endlessly and rapidly mutating exterior surround and turned inward to an unhealthily dominant degree, and itself become another marketing genre targeted at a limited fringe demographic, if perhaps the largest.

It's not so much that speculative fiction can do it, it's that speculative fiction must do it, to be literarily successful on its own inherent terms, and to be commercially successful in the end by delivering what the media product to which it has become tied to the point of aping cannot. *Son of Man*, *Neurogenesis*, *Butcher Bird*, and *The First Law* trilogy all do that. So why have they all been relegated to fringe publication?

Partly, I believe, because the fringe readerships they centrally appeal to may be limited in size, or at least such is the marketers' perception. Partly because the current failing business model, tranching fiction up into restrictive genres marketed to specialized demographics, doesn't get that fiction that crosses at least two of these genre boundaries and therefore appeals to more than one readership demographic—for instance in the manner in which Michael Chabon's *The Yiddish*

Policeman's Union is speculative fiction, detective fiction, and literary fiction—can easily enough succeed commercially if it succeeds literarily.

What the failing publishing model obscures and therefore cannot comprehend is that the very concept of genre itself is the problem, not the solution. Genrefication by its very nature cannot help but erode the viability of the commercial center by slicing it up into material for targeted readerships.

The ultimate solution is going to have to be dissolving genre boundaries both commercially and literarily and publishing more novels like *The Possibility of an Island* (*La Possibilité d'une Île*), by Michel Houellebecq, and publishing them in the same manner.

In France, Houellebecq has always been a “literary” author, but also almost from the beginning a best-selling author, and for a decade or so maybe the most famous and commercially successful French author—certainly the most famous and successful one with a well-regarded literary reputation. Yet while he was a respected literary author prior to his second novel, it was that book, *The Elementary Particles* (*Les Particules Élementaires*), which both won him a prestigious literary prize and launched him into commercial and literary superstardom.

And though it certainly wasn't published as such or greeted as such, *The Elementary Particles*, this novel which gained Houellebecq fame, fortune, and reputation as a “serious literary writer” in France and which was published as commercially successful “serious literary fiction” by Knopf in the United States, fulfills any conceivable definition of SF.

True, the bulk of the novel, written in Houellebecq's characteristic bitterly misanthropic yet somehow deeply enjoyable style, is devoted to the story of two half brothers, their messed up lives and sexual obsessions, and diatribes against the “baba cool” remnants of the 1960s counterculture. But the novel ends with the despicable human race replaced by a sci-

entifically created post-humanity that reproduces by cloning, thus avoiding the dysfunctional linkage of sexuality and reproduction. And unlike most other so-called “mainstream” writers trying their hand at science fiction, when Houellebecq introduces a speculative technological or scientific element, he does so with the rigor of a hard science fiction writer and then some.

In commercial marketing terms, with *The Elementary Particles*, Michel Houellebecq reached two readership demographics in the United States as well as in France, the readership for “literary fiction” and the readership for “science fiction,” with a novel that was not restrictively packaged or promoted to specifically place it in any genre category. When combined these relationships were enough for it to sell like a major best-seller in France and a minor one in the United States..

With *The Possibility of an Island*, Houellebecq did the same thing commercially and achieved the same sort of commercial and critical success. But here the SF is front and center—indeed dominant from the very beginning and all the way through—though Houellebecq achieves an even stronger balance between the psychological and the speculative, the deep interior of his character or characters and the external surround, like all the best science fiction thematically focused on the interface and feedback between them.

I say “character or characters” because in one way there are several and in another only one. For once again Houellebecq is concerned with humanity versus post-humanity, here from the outset. The story is told from alternating viewpoints in alternating time-streams.

In the present or near future we have the singular human Daniel, the archetypal Houellebecqian bitter, unloved and unlovable, sexually obsessed, near psychopathic anti-hero.

In the future, we have a series of iterations of Daniel, beginning with number 24 and concluding with 26, with access

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to his memories, but themselves emotionless post-human clones of "Daniel 1," isolate members of the successor race created by the Elohimites, a techno-religious science fictional cult with strong echoes of a minor French cult called the Raelians and also of Scientology, which replaces the world's monotheistic religions within the lifetime of Daniel 1.

Houellebecq's concern with the psychic results of the speculative element is front and center here, and his rendering of the necessary scientific and technical material knowledgeable and convincing enough to satisfy the shade of John W. Campbell. If this isn't a science fiction novel that touches all the science fictional bases, then nothing is.

But Houellebecq is as concerned with the bleak inner life (or lack thereof) and chillingly gross sexual obsessions of the human Daniel 1 as he is with his future post-human iterations, thus combining

the virtues of the literarily successful science fiction novel with those of the successful so-called literary novel. Thus, in marketing terms, hitting two fringe demographics and capturing a readership greater than the sum of their parts.

And unintentionally, perhaps, creating a novel that is both a model for and a metaphor of the direction speculative fiction, and perhaps prose fiction in general, is going to have to take to live long and prosper in the twenty-first century.

Things have fallen apart, the old center cannot hold.

But if there are nine and sixty ways of composing genre lays, by the very numbers of the bottom line, there are no less than 4761 possibilities of cross-genre synthesis, and every single unique one of them can be right.

Those who are not busy being born are busy dying.

Those who adapt, survive.○

SF CONVENTIONAL CALENDAR

Our own Shelia Williams will be at CapClave. Also, consider FenCon, Foolscap, AlbaCon and ConClave this month. Plan now for social weekends with your favorite SF authors, editors, artists, and fellow fans. For an explanation of con(vention)s, a sample of SF folksongs, and info on fanzines and clubs, send me an SASE (self-addressed, stamped #10 [business] envelope) at 10 Hill #22-L, Newark NJ 07102. The hot line is (973) 242-5999. If a machine answers (with a list of the week's cons), leave a message and I'll call back on my nickel. When writing cons, send an SASE. For free listings, tell me of your con 5 months out. Look for me at cons behind the Filthy Pierre badge, playing a musical keyboard.—Erwin S. Strauss

SEPTEMBER 2009

- 4-7—DragonCon. For info, write: Box 16459, Atlanta GA 30321. Or phone: (404) 909-0115 (10 AM to 10 PM, not collect). (Web) dragoncon.net. (E-mail) Info@dragoncon.net. Con will be held in: Atlanta GA (if city omitted, same as in address) at the Hyatt. Guests will include: far too many to list. Huge multi-media event. Five-figure crowd expected.
- 4-7—DiscWorldCon. (480) 945-6890. nadwcon.org. Mission Palms, Tempe AZ. Terry Pratchett, Diane Duane, P. Morwood.
- 4-7—Anime Vegas. animevegas.com. Cashman Center, Las Vegas NV. Clinkenbeard, Jewell, Rusika, Bailey, Willingham.
- 4-7—AnimeFEST. animefest.org. Hyatt Regency, Dallas TX.
- 4-7—AICon. alcon.org.uk. Leicester UK. Martin Billamy, Ahemi Soloway. Anime, and other aspects of Japanese culture.
- 5-7—KumoriCon. kumoricon.org. Hilton, Portland OR. Soul Candy, Last Stop Tokyo, Svetlana Chmakova. Anime.
- 5-7—Abrams, Inc. +44 (0) 1234 752-485. massiveevents.co.uk. Park Inn, Northampton UK. Michael Emerson. Media.
- 11-13—Nan Desu Kan. ndkdenver.org. Marriott Tech Center, Denver CO. Japanese anime, art, games, culture generally.
- 11-13—ScareFest. (859) 233-4567. thescarefest.com. Lexington Center, Lexington KY. Horror and the paranormal.
- 18-20—FenCon, Box 701448, Dallas TX 75370. fencon.org. Crowne Plaza. Bujold, Cornell, DeCandido, Ulbrich, K. Miller.
- 18-20—Horror Realm, Box 10400, Pittsburgh PA 15234. (412) 216-0317. Crowne Plaza South. Ken Foree, Sharon Ceccatti.
- 18-20—Dark Xmas, 1485 North Rd., Warren OH 44484. darkxmas.fatcow.com. Denise Crosby, Cory Hairn, G. Tom Mac.
- 18-20—StarFury, 148a Queensway, Bayswater London W2 6LY, UK. +44 (0) 7930 319-119. Blackpool UK. Media.
- 25-27—Foolscap, Box 2461, Bellevue WA 98111. (206) 938-2452. foolscap.org. Marriott, Redmond WA. SF writing and art.
- 25-27—ConCeption, 2112 W. Galen Blvd., #8-199, Aurora IL 60500. concentricconventioncompany.com. Glen Elyn IL.
- 25-27—HorrorFind Weekend, 9722 Groffs Mill Rd., Owings Mills MD 21117. horrorfindweekend.com. Hunt Valley MD.
- 25-27—AnimeFest. newyorkanimefestival.com. Javits Center, New York, NY. Anime.

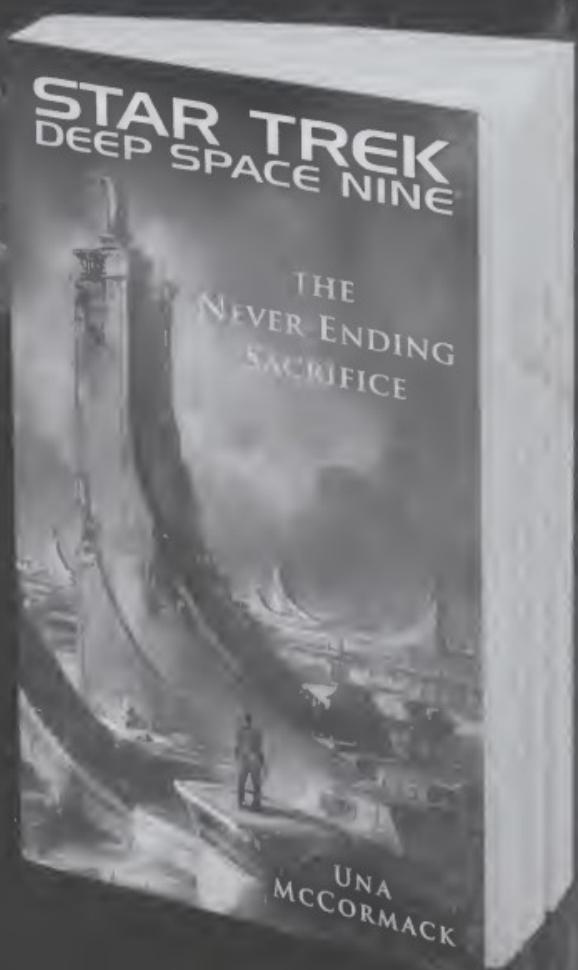
OCTOBER 2009

- 2-4—Browncoat Ball. browncoatball.com. Governor Hotel, Portland OR. For fans of Firefly and Serenity.
- 2-4—RealmsCon, Box 271555, Corpus Christi TX 78427. realmscon.com. Holiday Inn, Emerald Beach. Many guests. Anime.
- 9-11—AlbaCon, Box 2065, Albany NY 12220. 973242-5999. albacon.org. Best Western Sovereign. E. Hand, S. Hickman.
- 9-11—ConClave, Box 2915, Ann Arbor MI 48106. conclavesf.org. Crowne Plaza Airport, Romulus (Detroit) MI. B. Gehrm.
- 9-11—GayLaxiCon, Box 6045, Minneapolis MN 55406. gaylaxicon2009.org. M. Weis. For gay fans and their friends.
- 9-11—Spooky Empire. (954) 258-7852. spookyempire.com. Wyndham resort, Orlando FL. Horror.
- 11-18—Star Trek Cruise, 163 S. End, St. Augustine FL 32095. (888) 361-5708. Sailing from Los Angeles CA. Tim Russ.
- 15-18—Con on the Cob, 372 Alpha Ave., Akron OH 44312. (330) 734-0337. cononthecob.com. Hudson OH. L. Elmore.
- 16-18—CapClave, c/o Box 53, Ashton MD 20861. capclave.org. Hilton, Rockville MD. Harry Turtledove, Sheila Williams.
- 16-18—Arcana, Box 8036, Minneapolis MN 55408. (612) 721-5959. arcanacon.com. St. Paul MN. "The Dark Fantastic."
- 16-18—ValleyCon, Box 7202, Fargo ND 58106. valleycon.com. Doublewood Inn. George R.R. Martin. SF and fantasy.

AUGUST 2010

- 5-8—North American SF Convention, c/o SAFE, 2144 B Ravenglass Pl., Raleigh NC 27612. raleighnasfc2010.org.
- SEPTMBER 2010
- 2-6—Aussiecon 4, GPO Box 1212, Melbourne VIC 3001, Australia. aussiecon4.org.au. World SF Convention. US\$175.
- AUGUST 2011
- 17-21—Reno Worldcon, Box 13278, Portland OR 97213. rcfi.org. Reno NV. The 2011 World Science Fiction Convention.

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